# CCD-TR2200E/TR2300E/TR3300E
## RMT-715/716

# SERVICE MANUAL

AEP Model
UK Model
CCD-TR2200E/TR3300E
E Model
CCD-TR2300E/TR3300E
Australian Model
CCD-TR3300E
Hong Kong Model
Tourist Model
CCD-TR2300E

video Hi8
Handycam
B MECHANISM

Video 8
SONY
84x
SONY
Handycam

**Photo : CCD-TR3300E**
**: RMT-716**

**For MECHANISM ADJUSTMENTS, refer to the "8mm Video MECHANICAL ADJUSTMENT MANUAL VII" (9-973-801-11).**

## SPECIFICATIONS

### Video camera recorder

#### System

**Video recording system**
Two rotary heads, Helical scanning FM system
**Audio recording system**
Rotary heads, FM system
**Video signal**
PAL colour, CCIR standards
**Usable cassette**
8mm video format cassette (Hi8 or standard 8 mm)
**Recording/Playback time**
SP mode: 2 hours (E5/P5-120) (AEP,UK)
SP mode: 1 hours 30 minutes (E5/P5-90)(AUS,E,HK,JE)
LP mode: 4 hours (E5/P5-120) (AEP,UK)
LP mode: 3 hours (E5/P5-90) (AUS,E,HK,JE)
**Fastforward/rewind time**
Approx. 4 min. (E5/P5-120)
**Image device**
CCD (Charge Coupled Device)
**Viewfinder**
CCD-TR2300E/TR3300E:
Electronic viewfinder (colour)
CCD-TR2200E:
Electronic viewfinder (Monochrome)
**Lens**
Combined power zoom lens
Filter diameter 52 mm (2 $^{1}/_{8}$ in.)
21 x (Optical)
42 x (Digital): CCD-TR2200E/TR3300E (AEP,UK)
84 x (Digital): CCD-TR2300E/TR3300E (AUS,E,HK,JE)
**Focal distance**
3.9 – 81.9 mm ($^{5}/_{32}$ – 3 $^{1}/_{4}$ in.)
37 – 777 mm (1 $^{1}/_{2}$ – 30 $^{5}/_{8}$ in.) when converted to a 35 mm still camera
**Colour temperature**
Auto,
One push white balance ⛅,
Indoor ☼ 3,200 K,
Outdoor ☀ 5,800 K
**Minimum illumination**
2 lux at F1.6
0.1 lux at F1.6 when using the Slow shutter function (CCD-TR3300E only)
**Illumination range**
2 lux to 100,000 lux
**Recommended illumination**
More than 100 lux

#### Input and output connectors

**S video input/output**
4-pin mini DIN
Luminance signal: 1 Vp-p, 75 ohms, unbalanced
Chrominance signal: 0.3 Vp-p, 75 ohms, unbalanced
**Video input/output**
Phono jack, 1 Vp-p, 75 ohms, unbalanced
**Audio input/output**
Phono jacks (2: stereo L and R)
Input 327 mV, input impedance more than 47 kilohms
Output 327 mV, (at output impedance 47 kilohms) impedance less than 2.2 kilohms
**RFU DC OUT**
Special minijack, DC 5 V
**Headphone jack**
Stereo minijack
**LANC control jack**
Stereo mini-minijack (ø 2.5 mm)
**MIC jack**
Minijack, 0.388 mV low impedance with 2.5 to 3.0 V DC, output impedance 6.8 kilohms (ø 3.5 mm)
Stereo type

#### General

**Power requirements**
7.2 V (battery pack)
8.4 V (AC power adaptor)
**Average power consumption**
CCD-TR3300E:AEP,UK
4.8 W during camera recording
CCD-TR3300E:AUS,E,HK,JE
4.6 W during camera recording
CCD-TR2200E/2300E:
4.5 W during camera recording
**Operating temperature**
0°C to 40°C (32°F to 104°F)
**Storage temperature**
–20°C to +60°C (–4°F to +140°F)
**Dimensions (Approx.)**
CCD-TR2300E/TR3300E:
110 x 110 x 215 mm
(4 $^{3}/_{8}$ x 4 $^{3}/_{8}$ x 8 $^{1}/_{2}$ in.) (w/h/d)
CCD-TR2200E:
110 x 110 x 222 mm
(4 $^{3}/_{8}$ x 4 $^{3}/_{8}$ x 8 $^{7}/_{8}$ in.) (w/h/d)
**Mass (Approx.)**
CCD-TR2300E/TR3300E:
930 g (2 lb) excluding the battery pack, lithium battery, cassette, lens cap and shoulder strap
1.1 kg (2 lb 6 oz) including the battery pack NP-F530, lithium battery CR 2025, cassette E5/P5-120, lens cap and shoulder strap
CCD-TR2200E:
920 g (2 lb) excluding the battery pack, lithium battery, cassette, lens cap and shoulder strap
1.1 kg (2 lb 6 oz) including the battery pack NP-F530, lithium battery CR 2025, cassette E5/P5-120, lens cap and shoulder strap
**Microphone**
Stereo type
**Supplied accessories**
See page 3.

### AC power adaptor

**Power requirements**
110 – 240 V AC, 50/60 Hz
**Power consumption**
25 W
**Output voltage**
DC OUT: 8.4 V, 1.9 A in operating mode
Battery charge terminal: 8.4 V, 1.4 A in charge mode
**Application**
Sony battery packs NP-F530, NP-F730 lithium ion type

– Continued on next page –

**Hi8 VIDEO CAMERA RECODER**
**SONY®**

MICROFILM

**Operating temperature**
0°C to 40°C (32°F to 104°F)
**Storage temperature**
–20°C to +60°C (–4°F to +140°F)
**Dimensions (Approx.)**
81 x 45 x 163 mm (3 1/4 x 1 13/16 x 6 1/2 in.) (w/h/d) including projecting parts and controls
**Mass (Approx.)**
AC-V315: 480 g (1 lb 1 oz)
AC-V316: 560 g (1 lb 3 oz)

## Handycam Station

(for CCD-TR3300E only)
**S video/Video/Audio input/output**
Same specifications as video camera recorder
**RFU DC OUT**
Same specifications as video camera recorder
**LANC control jack**
Stereo mini-mini jack (ø 2.5 mm)
**Handycam Station Terminal**
20 pin special connector
**Operating temperature/Storage temperature**
Same specifications as video camera recorder
**Dimensions(Approx.)**
153 x 45 x 163 mm(w/h/d)
**Mass (Approx.)**
340 g

Design and specifications are subject to change without notice.

**Table for difference of functions**

| | | TR2200E | TR2300E | TR3300E | | |
|---|---|---|---|---|---|---|
| | | AEP, UK | E, HK, JE | AEP, UK | E, AUS, HK, JE | |
| Classification | | TYPE A | TYPE B | TYPE C | TYPE D | |
| Remote Commander | | RMT-716 | RMT-715 | RMT-716 | RMT-715 | |
| Viewfinder | | B/W EVF | Color EVF | | | Note 1 |
| Digital Memory | | | | ○ | ○ | Note 2 |
| Easy Connector | | ○ | | ○ | ○ | Note 3 |
| VTR REC (Line in) | | | ○ | | ○ | |
| Lens | Optical | 21 × | 21 × | 21 × | 21 × | |
| | Digital | 42 × | 84 × | 42 × | 84 × | |

**Note** 1: B/W EVF (with VF-104 board)
Color EVF (with VF-95, VF-96, LB-45 board and FP-420 Flexible board)
2: ○ (with MM-32 board)
3: ○ (with EZ-21 board, and IC571, 600 of VC-177 board)

- Abbreviation

| | |
|---|---|
| AUS | : Australian model |
| HK | : Hong Kong model |
| JE | : Tourist model |

## SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

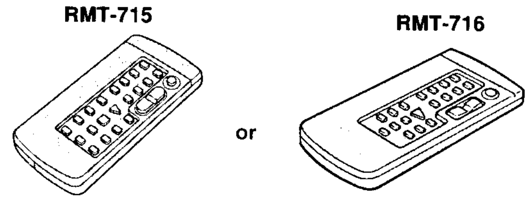
1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
4. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
5. Check the B+ voltage to see it is at the values specified.
6. Flexible Circuit board Repairing
   - Keep the temperature of the soldering iron around 270°C during repairing.
   - Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
   - Be careful not to apply force on the conductor when soldering or unsoldering.

**SAFETY-RELATED COMPONENT WARNING !!**

**COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.**

## Supplied accessories

1



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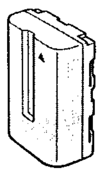

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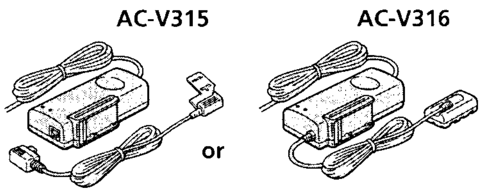
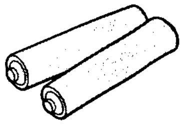


4

CR2025
SONY
+

5



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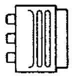

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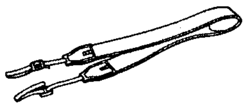

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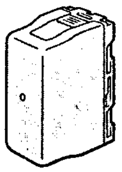

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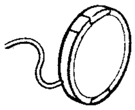

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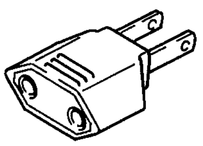

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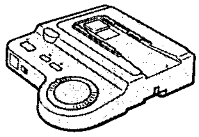


1 **Wireless Remote Commander** (1)
RMT-715: CCD-TR2300E/TR3300E: AUS, E
RMT-716: CCD-TR2200E/TR3300E: AEP, UK

2 **NP-F530 Battery pack** (1)

3 **AC power adaptor** (1)
AC-V315: CCD-TR2200E/TR3300E
AC-V316: CCD-TR2300E

4 **CR2025 Lithium Battery** (1)
The lithium battery is already installed in your camcorder.

5 **R6 (size AA) battery for Remote Commander** (2)

6 **A/V connecting cable** (1)

7 **21 pin adaptor** (1)

8 **Shoulder strap** (1)

9 **Battery case** (1)

10 **Lens cap** (1)
This lens cap is already set on your camcorder.

11 **2 pin conversion adaptor** (1)
CCD-TR2200E/TR2300E/TR3300E: AEP, UK

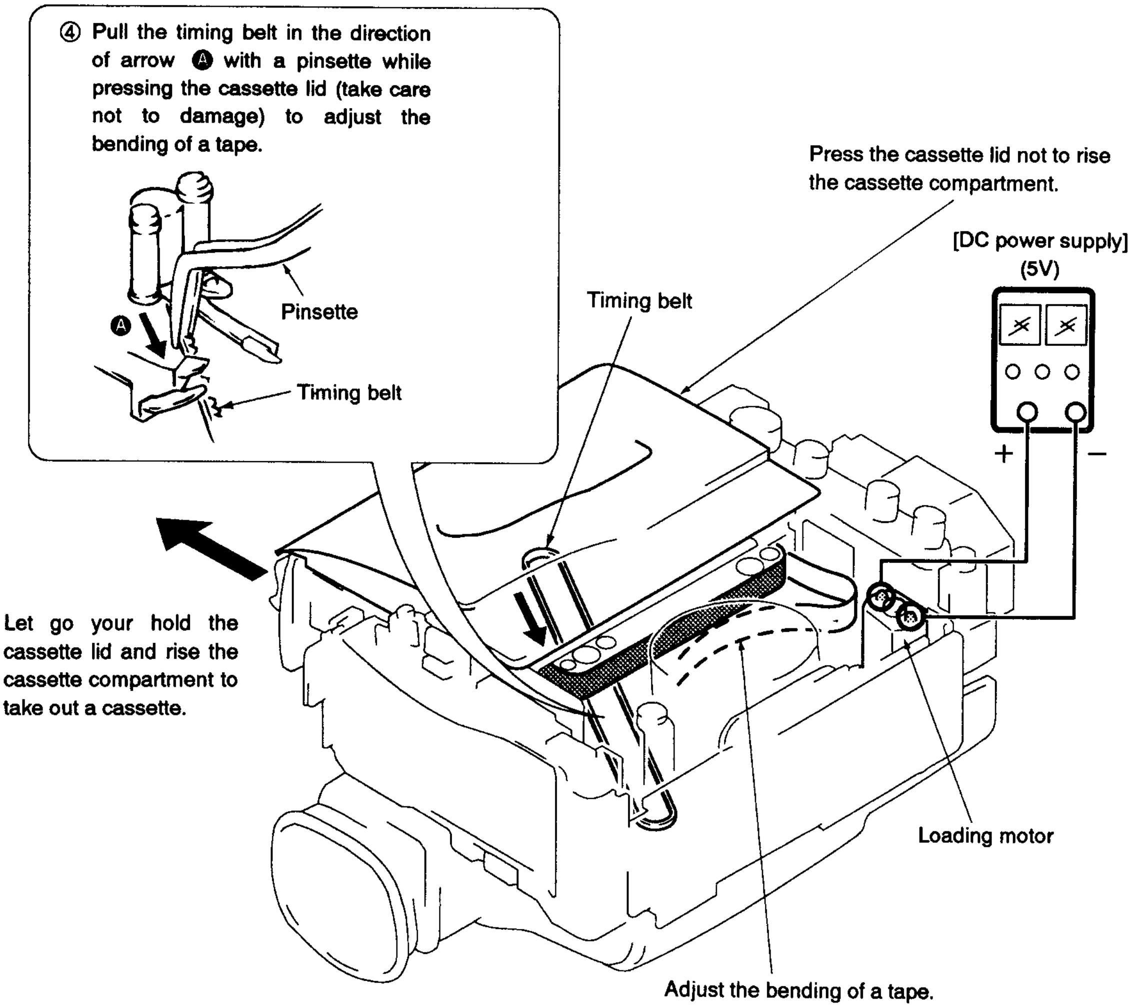
12 **HSA-V515 Handycam Station** (1)
CCD-TR3300E: AUS, E

**Note.**
Australian model is abbreviated as AUS.
Hong Kong model is abbreviated as HK.
Tourist model is abbreviated as JE.

# SERVICE NOTE

## TO TAKE OUT A CASSETTE WHEN NOT EJECT (FORCE EJECT).

① Refer to 2-2. to remove the Front panel assembly.
② Refer to 2-3. to remove the Cabient (L) assembly.
③ Add +5V from the DC power supply and unload with a pressing the cassette lid.



④ Pull the timing belt in the direction of arrow Ⓐ with a pinsette while pressing the cassette lid (take care not to damage) to adjust the bending of a tape.

Press the cassette lid not to rise the cassette compartment.

⑤ Let go your hold the cassette lid and rise the cassette compartment to take out a cassette.

Adjust the bending of a tape.

Ⓐ
Pinsette
Timing belt
Timing belt
[DC power supply]
(5V)
+
−
Loading motor

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1. 1.5 MHz Deviation Adjustment 6-55
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3-6. Arrangement Diagram for Adjustment Parts 6-58

There is the color reproduction standard frame at the back of the book.

# Using this manual

The instructions in this manual are for the two models listed below. Before you start reading this manual and operating the unit, check your model number by looking at the bottom of your camcorder. The CCD-TR3300E is the model used for illustration purposes. Otherwise, the model name is indicated in the illustrations. Any differences in operation are clearly indicated in the text, for example, "CCD-TR3300E only." As you read through this manual, buttons and settings on the camcorder are shown in capital letters.
e.g. Set the POWER switch to CAMERA.
As indicated with ♪ in the illustrations, you can hear the beep sound to confirm your operation.

**Type of differences**

| Model number | CCD-TR2200E | CCD-TR3300E |
|---|---|---|
| Viewfinder | B/W | Colour |
| Slow Shutter | — | • |
| Overlap/Wipe | — | • |
| Digital Effect | — | 3 modes |

## Note on TV colour systems

TV colour systems differ from country to country. To view your recordings on a TV, you need a PAL system-based TV.

## Precaution on copyright

Television programmes, films, video tapes, and other materials may be copyrighted. Unauthorized recording of such materials may be contrary to the provision of the copyright laws.

# Uso de este manual

Las instrucciones de este manual se aplican a los dos modelos enumerados a continuación. Antes de comenzar la lectura de este manual y de emplear la unidad, compruebe su número de modelo situado en la parte inferior de la videocámara. El modelo que aparece en las ilustraciones es el CCD-TR3300E. El nombre del modelo se especifica en las ilustraciones y cualquier diferencia de funcionamiento aparece claramente indicada en el texto, por ejemplo, "sólo CCD-TR3300E". Como comprobará al leer el manual, los botones y ajustes de la videocámara aparecen en mayúsculas.
Ejemplo: Ajuste el interruptor POWER en CAMERA.
Como se indica con el símbolo ♪ en las ilustraciones, la unidad emite un pitido para confirmar operaciones.

**Tipo de diferencias**

| Número de modelo | CCD-TR2200E | CCD-TR3300E |
|---|---|---|
| Visor electrónico | B/W | Color |
| Obturación a baja velocidad | — | • |
| Superposición/ Desplazamiento de imágenes fijas | — | • |
| Efecto digital | — | 3 modos |

## Nota sobre sistemas de televisión en color

Los sistemas de televisión en color varían en función del país. Para visualizar grabaciones en un televisor, éste debe estar basado en el sistema PAL.

## Precaución sobre los derechos de autor (copyright)

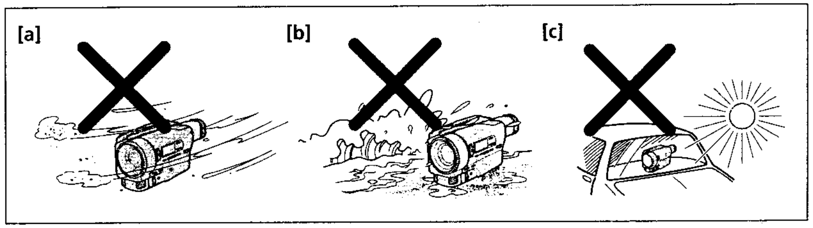
Los programas de televisión, películas, cintas de vídeo y otros materiales pueden estar protegidos por el copyright. La grabación no autorizada de tales materiales puede ir en contra de lo dispuesto en las leyes de copyright.

## Precautions on camcorder care

- **Do not let sand get into the camcorder. When you use the camcorder on a sandy beach or in a dusty place, protect it from the sand or dust. Sand or dust may cause the unit to malfunction, and sometimes this malfunction cannot be repaired [a].**
- **Do not let the camcorder get wet. Keep the camcorder away from rain and sea water. Letting the camcorder get wet may cause the unit to malfunction, and sometimes this malfunction cannot be repaired [b].**
- **Never leave the camcorder exposed to temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight [c].**

## Precauciones sobre el cuidado de la videocámara

- **Evite que se introduzca arena en la videocámara. Si la utiliza en una playa de arena o en un lugar polvoriento, protéjala de la arena y del polvo; estos elementos pueden provocar fallos de funcionamiento que a veces no sea posible reparar [a].**
- **Evite que la videocámara se moje. Manténgala alejada de la lluvia y del agua marina; si la unidad se moja pueden producirse fallos de funcionamiento que a veces no sea posible reparar [b].**
- **No exponga la unidad a temperaturas superiores a 60°C (140°F), como en un automóvil aparcado al sol o bajo la luz solar directa [c].**



Contents of the recording cannot be compensated if recording or playback is not made due to a malfunction of the camcorder, video tape, etc.

El contenido de la grabación no podrá corregirse si no es posible realizar la grabación o la reproducción debido a algún fallo de funcionamiento de la videocámara, cinta de vídeo, etc.

SECTION 1
GENERAL

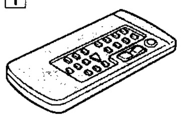
This section is extracted from instruction manual of CCD-TR2200E/TR3300E.

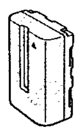
# Checking supplied accessories

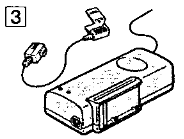
# Comprobación de los accesorios suministrados

Check that the following accessories are supplied with your camcorder.

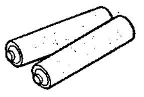
Compruebe que los siguientes accesorios están incluidos junto con la videocámara:

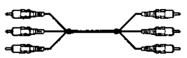
1


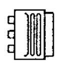
2


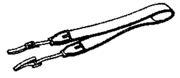
3


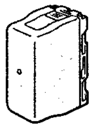
4

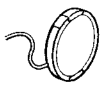
5


6


7


8


9


10


1. **Wireless Remote Commander** (1) (p.120)
2. **NP-F530 Battery pack** (1) (p.8)
3. **AC power adaptor** (1) (p.8, 27)
4. **CR2025 Lithium Battery** (1) (p.90)
   The lithium battery is already installed in your camcorder.
5. **R6 (size AA) battery for Remote Commander** (2) (p.121)
6. **A/V connecting cable** (1) (p.21, 22)
7. **21 pin adaptor** (1) (p.22)
8. **Shoulder strap** (1) (p.122)
9. **Battery case** (1) (p.29)
10. **Lens cap** (1) (p.13, 77)
    This lens cap is already set on your camcorder.

1. **Mando a distancia inalámbrico** (1) (pág. 120)
2. **Paquete de batería NP-F530** (1) (pág. 8)
3. **Adaptador de alimentación de CA** (1) (pág. 8, 27)
4. **Pila de litio CR2025** (1) (pág. 90)
   La pila de litio ya se encuentra instalada en la videocámara.
5. **Pila R6 (tamaño AA) para el mando a distancia** (2) (pág. 121)
6. **Cable de conexión de A/V** (1) (pág. 21, 22)
7. **Adaptador de 21 pines** (1) (pág. 22)
8. **Asa de hombro** (1) (pág. 122)
9. **Estuche de pilas** (1) (pág. 29)
10. **Tapa del objetivo** (1) (pág. 13, 77)
    Esta tapa ya se encuentra fijada a la videocámara.

# Charging and installing the battery pack

# Carga e instalación del paquete de batería

Before using your camcorder, you first need to charge and install the battery pack. To charge the battery pack, use the supplied AC power adaptor.

This camcorder operates with the "InfoLITHIUM" battery labeled ⓘ *InfoLITHIUM* such as NP-F530/F730. If you use any other battery to operate your camcorder, the camcorder may not operate or the battery life may be shortened.

"InfoLITHIUM" is a trademark of Sony Corporation.

## Charging the battery pack

Charge the battery pack on a flat surface without vibration.

**(1)** Connect the mains lead to mains.

**(2)** Align the surface of the battery pack indicated by the ▶ mark with the edge of the terminal shutter of the AC power adaptor. Then fit and slide the battery pack in the direction of the arrow. The CHARGE lamp (orange) lights up. Charging begins.

When charging is completed, the CHARGE lamp goes out. If the battery pack is used right after the CHARGE lamp goes out, it will last for a normal period (**normal charge**). If allowed to charge for an additional hour or so, the battery pack will last for a longer period (**full charge**). Unplug the unit from the mains, then remove the battery pack and install it into the camcorder. You can also use the battery pack before it is completely charged.

Antes de emplear la videocámara, es necesario cargar e instalar el paquete de batería. Para cargarlo, utilice el adaptador de alimentación de CA suministrado.

Esta videocámara funciona con pilas "InfoLITHIUM" que presenten la etiqueta ⓘ *InfoLITHIUM*, como la NP-F530/F730. Si emplea la videocámara con otro tipo de pila, es posible que dicha videocámara no funcione o que la duración de la pila se reduzca.

"InfoLITHIUM" es una marca comercial de Sony Corporation.

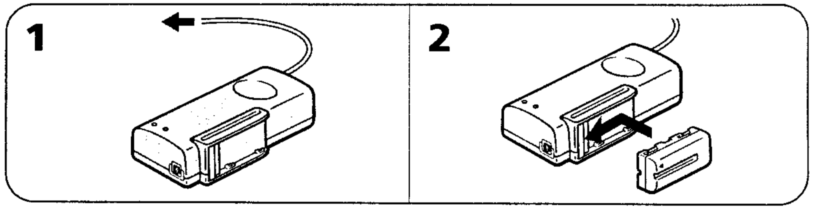
## Carga del paquete de batería

Realice la carga del paquete de batería sobre una superficie plana sin vibraciones.

**(1)** Conecte el cable de alimentación a la toma de corriente.

**(2)** Alinee la superficie, indicada mediante la marca ▶, del paquete de batería con el extremo del terminal del obturador del adaptador de alimentación de CA. A continuación, encaje y deslice el paquete de batería en la dirección de la flecha. El indicador CHARGE (naranja) se ilumina y comienza la carga.

Una vez finalizada la carga, el indicador CHARGE se apaga. Si utiliza el paquete de batería inmediatamente después de apagarse dicho indicador, su duración será la normal (**carga normal**). Si lo carga durante aproximadamente una hora más, su duración será mayor (**carga total**). Desenchufe la unidad de la toma de corriente, extraiga el paquete de batería e instálelo en la videocámara. También es posible utilizar el paquete de batería antes de que esté completamente cargado.



## Charging time

| Battery pack | Charging time* (min.) |
|---|---|
| NP-F530 (supplied) | 170 (110) |
| NP-F730 | 250 (190) |

* Approximate minutes to charge an empty battery pack using the supplied AC power adaptor (full charge). (Lower temperatures require a longer charging time.)

The time required for a normal charge is indicated in parentheses.

## Battery life

— CCD-TR3300E

| Battery pack | Continuous recording time1) (min.) | Typical recording time2) (min.) |
|---|---|---|
| NP-F530 (supplied) | 100 (90) | 60 (55) |
| NP-F730 | 225 (205) | 135 (125) |

— CCD-TR2200E

| Battery pack | Continuous recording time1) (min.) | Typical recording time2) (min.) |
|---|---|---|
| NP-F530 (supplied) | 110 (95) | 65 (55) |
| NP-F730 | 245 (220) | 145 (130) |

The available time for a fully charged battery is indicated outside parentheses. The available time for normal charged battery is indicated in parentheses.

Battery life will be shorter if you use the camcorder in a cold environment.

1) Approximate continuous recording time indoors.

2) Approximate minutes when recording while you repeat recording start/stop, zooming and turning the power on/off. The actual battery life may be shorter.

## Tiempo de carga

| Paquete de batería | Tiempo de carga* (min.) |
|---|---|
| NP-F530 (suministrado) | 170 (110) |
| NP-F730 | 250 (190) |

* Minutos aproximados para cargar un paquete de batería agotado con el adaptador de alimentación de CA suministrado (carga total). (A bajas temperaturas, el tiempo de carga necesario es mayor.)

El tiempo necesario para obtener una carga normal se indica entre paréntesis.

## Duración del paquete de batería

— CCD-TR3300E

| Paquete de batería | Tiempo de grabación continua1) (min.) | Tiempo de grabación normal2) (min.) |
|---|---|---|
| NP-F530 (suministrado) | 100 (90) | 60 (55) |
| NP-F730 | 225 (205) | 135 (125) |

— CCD-TR2200E

| Paquete de batería | Tiempo de grabación continua1) (min.) | Tiempo de grabación normal2) (min.) |
|---|---|---|
| NP-F530 (suministrado) | 110 (95) | 65 (55) |
| NP-F730 | 245 (220) | 145 (130) |

El tiempo disponible de un paquete de batería completamente cargado se indica a la izquierda, mientras que el correspondiente a un paquete con carga normal se indica entre paréntesis.

La duración del paquete de batería será inferior si utiliza la videocámara en lugares fríos.

1) Tiempo aproximado de grabación continua en interiores.

2) Minutos aproximados al grabar con repetición de las operaciones de inicio/parada de grabación, zoom y activación y desactivación de la alimentación. Es posible que la duración real del paquete de batería sea inferior.

### Note on remaining battery time indication during recording

When you use the InfoLITHIUM battery pack NP-F530 or NP-F730, remaining battery time is displayed in the viewfinder. However, the indication may not be displayed properly, depending on using conditions and circumstances.

## To remove the battery pack

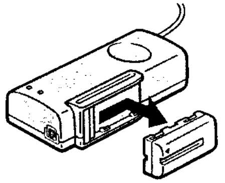
Slide the battery pack in the direction of the arrow.

### Nota sobre la indicación de tiempo de batería restante durante la grabación

Si utiliza el paquete de batería NP-F530 o NP-F730 InfoLITHIUM, el tiempo de batería restante aparece en el visor electrónico. No obstante, la indicación puede no mostrarse correctamente en función de las condiciones y circunstancias de uso.

## Extracción del paquete de batería

Deslice el paquete de batería en la dirección de la flecha.



### Notes on charging the battery pack

- The CHARGE lamp will remain lit for a while even if the battery pack is removed and the mains lead is unplugged after charging the battery pack. This is normal.
- If the CHARGE lamp does not light, disconnect the mains lead. After about one minute, reconnect the mains lead again.
- You cannot operate the camcorder using the AC power adaptor while charging the battery pack.
- When a fully charged battery pack is installed, the CHARGE lamp will light once, then go out.

### Notas sobre la carga del paquete de batería

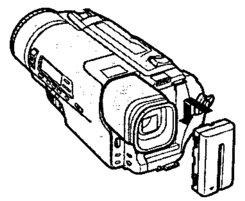
- El indicador CHARGE permanecerá iluminado durante unos momentos aunque haya extraído el paquete de batería y haya desenchufado el cable de alimentación después de cargar dicho paquete. Esto es normal.
- Si el indicador CHARGE no se ilumina, desconecte el cable de alimentación. Transcurrido un minuto aproximadamente, vuelva a conectarlo.
- No es posible utilizar la videocámara con el adaptador de alimentación de CA mientras se carga el paquete de batería.
- Al instalar un paquete de batería totalmente cargado, el indicador CHARGE se ilumina una vez y, a continuación, se apaga.

## Installing the battery pack

Align the grooves of the battery pack with the receptacles of the camcorder and slide the battery pack down until it catches on the battery release lever and clicks.

## Instalación del paquete de batería

Alinee las ranuras del paquete de batería con los receptáculos de la videocámara y deslice dicho paquete hacia abajo hasta que quede retenido en la palanca de liberación del paquete y se oiga un chasquido.

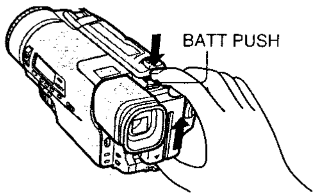


### To remove the battery pack

While pressing BATT (battery) PUSH, slide the battery pack in the direction of the arrow.

### Para extraer el paquete de batería

Deslícelo en la dirección de la flecha mientras pulsa BATT (batería) PUSH.



1-4

## Inserting a cassette

Make sure that the power source is installed. When you want to record in the Hi8 system, use Hi8 video cassette **Hi8**.

**(1)** While pressing the small blue button on the EJECT switch, slide it in the direction of the arrow. The cassette compartment automatically lifts up and opens.

**(2)** Insert a cassette with the window facing out.

**(3)** Close the cassette compartment by pressing the "PUSH" mark on the cassette compartment. The cassette compartment automatically goes down.

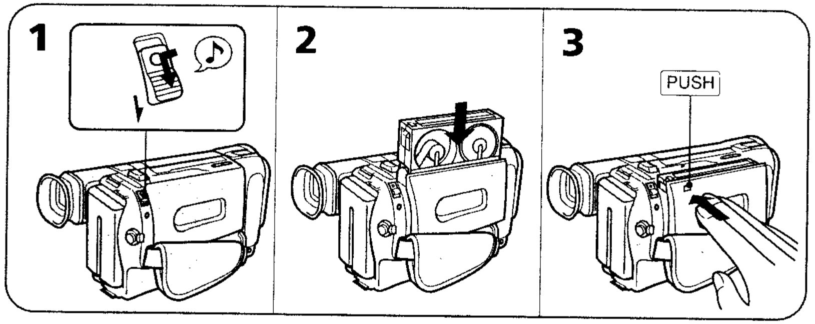
## Inserción de videocassettes

Asegúrese de que la fuente de alimentación está instalada. Si desea grabar con el sistema Hi8, emplee videocassettes **Hi8**.

**(1)** Deslice el interruptor EJECT en la dirección de la flecha mientras pulsa el botón azul pequeño del mismo. El compartimiento de videocassettes se eleva y se abre automáticamente.

**(2)** Inserte un videocassette con la ventana orientada hacia fuera.

**(3)** Cierre el compartimiento de videocassettes presionando la marca "PUSH" del mismo. Este descenderá automáticamente.



### To eject the cassette

While pressing the small blue button on the EJECT switch, slide it in the direction of the arrow.

### To prevent accidental erasure

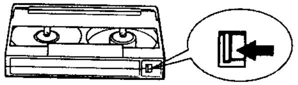
Slide the tab on the cassette to expose the red mark. If you insert the cassette with the red mark exposed and close the cassette compartment, the beeps sound for a while. If you try to record with the red mark exposed, the ⊠ and ⏏ indicators flash in the viewfinder, and you cannot record. To re-record on this tape, slide the tab back out covering the red mark.

### Para expulsar el videocassette

Deslice el interruptor EJECT en la dirección de la flecha mientras pulsa el botón azul pequeño del mismo.

### Para evitar borrados accidentales

Deslice la lengüeta del videocassette de forma que la marca roja quede al descubierto. Si inserta el videocassette con la marca roja al descubierto y cierra el compartimiento de videocassettes, la unidad emitirá pitidos durante unos instantes. Si intenta grabar con la marca roja al descubierto, los indicadores ⊠ y ⏏ parpadearán en el visor electrónico y no será posible grabar.
Para volver a grabar en esta cinta, deslice la lengüeta para cubrir la marca roja.



**Basic operations**

# Camera recording

Make sure that the power source is installed and a cassette is inserted. Before you record one-time events, you may want to make a trial recording to make sure that the camcorder is working correctly.

When you use the camcorder for the first time, power on it and reset the date and time to your time before you start recording. (p.92) To save battery power, the picture in the viewfinder appears only when you bring your face close to the viewfinder with STANDBY up (**Finder power save**). (CCD-TR3300E only)

**(1)** Remove the lens cap.
**(2)** While pressing the small green button on the POWER switch, set it to CAMERA.
**(3)** Turn STANDBY up.
**(4)** Press START/STOP. The camcorder starts recording. The "REC" indicator appears and the red lamp lights up in the viewfinder. The camera recording/battery lamps located on the front light up.

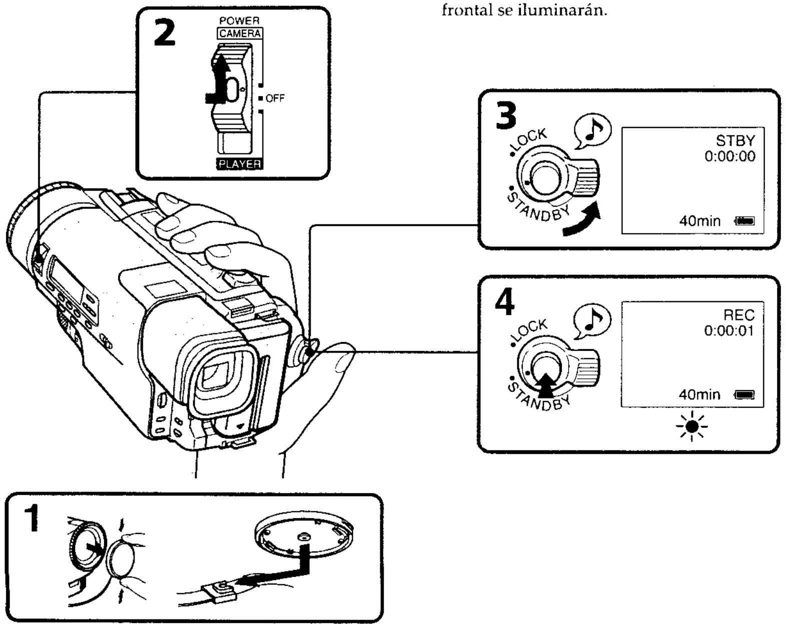
**Operaciones básicas**

# Grabación con la cámara

Asegúrese de que ha instalado la fuente de alimentación y de que ha insertado un videocassette. Antes de grabar acontecimientos únicos, es posible que desee realizar una grabación de prueba para cerciorarse de que la videocámara funciona correctamente.

Cuando utilice la videocámara por primera vez, actívela y ajuste la fecha y hora antes de comenzar la grabación (pág. 92). Para ahorrar energía del paquete de batería, el visor electrónico mostrará la imagen sólo cuando acerque el rostro a dicho visor con el interruptor STANDBY hacia arriba (**ahorro de energía del visor electrónico**) (sólo CCD-TR3300E).

**(1)** Retire la tapa del objetivo.
**(2)** Ajuste el interruptor POWER en CAMERA mientras pulsa el botón verde pequeño del mismo.
**(3)** Gire STANDBY hacia arriba.
**(4)** Pulse START/STOP para que la videocámara inicie la grabación. El indicador "REC" aparece y el indicador rojo se ilumina en el visor electrónico. Los indicadores de batería y grabación de la cámara situados en la parte frontal se iluminarán.



### To stop recording momentarily [a]

Press START/STOP again. The "STBY" indicator appears in the viewfinder (**Standby mode**).

### To finish recording [b]

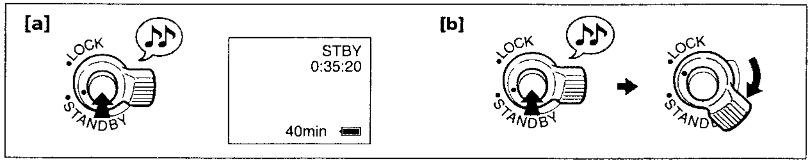
Press START/STOP again. Turn STANDBY down and set the POWER switch to OFF. Then, eject the cassette, remove the battery pack and put the lens cap on the lens.

### Para detener la grabación momentáneamente [a]

Vuelva a pulsar START/STOP. El indicador "STBY" aparece en el visor electrónico (**modo de espera**).

### Para finalizar la grabación [b]

Vuelva a pulsar START/STOP. Gire STANDBY hacia abajo y ajuste el interruptor POWER en OFF. A continuación, expulse el videocassette, extraiga el paquete de batería y coloque la tapa del objetivo sobre el mismo.

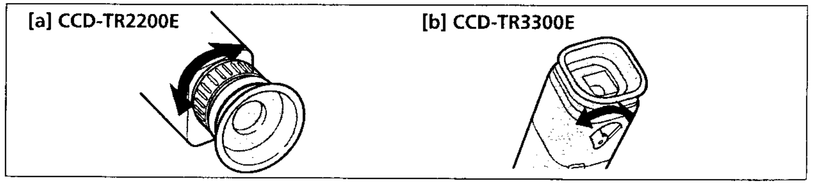


### To focus the viewfinder lens

If you cannot see the indicators in the viewfinder clearly, or after someone else has used the camcorder, focus the viewfinder lens. When using a monochrome viewfinder, turn the viewfinder lens adjustment ring so that the indicators in the viewfinder come into sharp focus **[a]** (CCD-TR2200E). When using a colour viewfinder, move the viewfinder lens adjustment lever so that the indicators in the viewfinder come into sharp focus **[b]** (CCD-TR3300E).

### Para enfocar el objetivo del visor electrónico

Si no puede ver con claridad los indicadores del visor electrónico o si alguien ha utilizado la videocámara, enfoque el objetivo. Si emplea un visor electrónico monocromo, gire el anillo de ajuste de objetivo del visor electrónico de forma que los indicadores de éste queden nítidamente enfocados **[a]** (CCD-TR2200E). Si emplea un visor electrónico en color, desplace la palanca de ajuste de objetivo del visor electrónico de forma que los indicadores de éste queden nítidamente enfocados **[b]** (CCD-TR3300E).



**Note on Standby mode**

If you leave the camcorder in Standby mode for 5 minutes while the cassette is inserted, the camcorder turns off automatically. This prevents wearing down the battery and wearing out the tape. To resume Standby mode, turn STANDBY down once and then up again. To start recording, press START/STOP.

**Nota sobre el modo de espera**

Si deja la videocámara en modo de espera durante 5 minutos mientras el videocassette se encuentra insertado, la videocámara se apagará automáticamente para evitar el desgaste del paquete de batería y de la cinta. Para reanudar el modo de espera, gire STANDBY hacia abajo una vez y, a continuación, hacia arriba. Para iniciar la grabación, pulse START/STOP.

### Notes on recording mode

- This camcorder records and plays back in SP (standard play) mode and in LP (long play) mode. The playback quality in LP mode, however, will not be as good as that in SP mode.
- When a tape recorded on this camcorder in LP mode is played back on other types of 8 mm camcorders or VCRs, the playback quality may not be as good as that on this camcorder.

### Note on recording

When you record from the beginning of a tape, run the tape for about 15 seconds before starting the actual recording. This will ensure that you won't miss any start-up scenes when you play back the tape.

### Notes on the tape counter

- The tape counter indicates the recording or playback time. Use it as a guide. There will be a time lag of several seconds from the actual time. To set the counter to zero, press COUNTER RESET.
- If the tape is recorded in SP and LP modes mixed, the tape counter shows incorrect recording time. When you intend to edit the tape using the tape counter, record in same (SP or LP) mode.

### Note on the beep sound

As indicated with ♪ in the illustrations, a beep sounds when you turn the power on or when you start recording, and two beeps sound when you stop recording, confirming the operation. Several beeps also sound as a warning of any unusual condition of the camcorder.
Note that the beep sound is not recorded on the tape. If you do not want to hear the beep sound, select "OFF" in the menu system.

### Notas sobre el modo de grabación

- Esta videocámara graba y reproduce en los modos SP (reproducción estándar) y LP (reproducción de larga duración). No obstante, la calidad de reproducción en modo LP no será tan satisfactoria como en modo SP.
- Cuando una cinta grabada en esta videocámara en modo LP se reproduce en otros tipos de videograbadoras o videocámaras de 8 mm, la calidad de reproducción puede ser inferior a la obtenida en esta videocámara.

### Nota sobre la grabación

Si graba desde el principio de la cinta, deje que ésta avance durante 15 segundos aproximadamente antes de comenzar la grabación. De esta forma se evitará perder escenas iniciales al reproducir la cinta

### Notas sobre el contador de cinta

- El contador de cinta indica el tiempo de grabación o reproducción. Empléelo como referencia. Suele marcar una diferencia de varios segundos con respecto al tiempo real. Para ajustar el contador a cero, pulse COUNTER RESET.
- Si la cinta se ha grabado mezclando los modos SP y LP, el contador de cinta mostrará un tiempo de grabación incorrecto. Cuando desee editar la cinta utilizando el contador de cinta, grabe en el mismo modo (SP o LP).

### Nota sobre los pitidos

Como se indica con el símbolo ♪ en las ilustraciones, la unidad emite un pitido al activar la alimentación o al iniciar la grabación, y dos pitidos al detener ésta para confirmar la operación. Igualmente, la unidad emite varios pitidos como aviso de cualquier condición anormal de la videocámara.
Observe que los pitidos no se graban en la cinta. Si no desea oír los pitidos, seleccione "OFF" en el sistema de menú.

### Notes on finder power save — CCD-TR3300E only

- The recording continues even when the picture in the viewfinder disappears during recording.
- If you set VF PW-SAVE to OFF in the menu system, the picture in the viewfinder does not disappear even when you turn your face away from the viewfinder.

### When moving from indoors to outdoors (or vice versa)

Turn STANDBY up and point the camcorder at a white object for about 15 seconds so that the white balance is properly adjusted.

## Using the zoom feature

Zooming is a recording technique that lets you change the size of the subject in the scene.
For more professional-looking recordings, use the zoom function sparingly.
"T" side: for telephoto (subject appears closer)
"W" side: for wide-angle (subject appears farther away)

### Notas sobre el ahorro de energía del visor electrónico — Sólo CCD-TR3300E

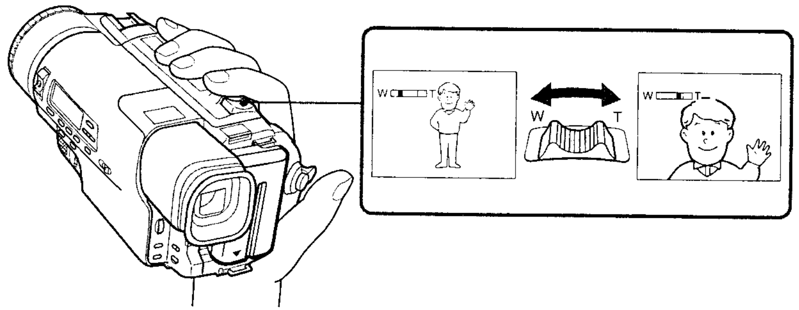
- La grabación seguirá realizándose aunque la imagen del visor electrónico desaparezca durante la grabación.
- Si ajusta VF PW-SAVE en OFF en el sistema de menú, la imagen del visor electrónico no desaparecerá aunque aleje su rostro de éste.

### Cuando se desplace de interiores a exteriores (o viceversa)

Gire STANDBY hacia arriba y dirija la videocámara hacia un objeto blanco durante unos 15 segundos para ajustar correctamente el balance de blancos.

## Uso de la función de zoom

El zoom es una técnica de grabación que permite modificar el tamaño del objeto de la escena. Para que las grabaciones adquieran una apariencia más profesional, emplee la función de zoom con moderación.
Lado "T": para telefoto (el objeto aparece más próximo)
Lado "W": para gran angular (el objeto aparece más alejado)



### Zooming speed (Variable speed zooming)

Move the power zoom lever a little for a slower zoom, move it further for a faster zoom.

**When you shoot a subject using a telephoto zoom**

If you cannot get a sharp focus while in extreme telephoto zoom, move the power zoom lever to the "W" side until the focus is sharp. You can shoot a subject that is at least about 80 cm (about 2 5/8 feet) away from the lens surface in the telephoto position, or about 1cm (about 1/2 inch) away in the wide-angle position.

**Notes on digital zoom**

- More than 21x zoom is performed digitally (42x), and the picture quality deteriorates as you go toward the "T" side. If you do not want to use the digital zoom, set the D ZOOM function to OFF in the menu system.
- The right side **[a]** in the power zoom indicator shows the digital zooming zone, and the left side **[b]** shows the optical zooming zone. If you set the D ZOOM function to OFF, the **[a]** zone disappears.

### Velocidad de zoom (Zoom de velocidad variable)

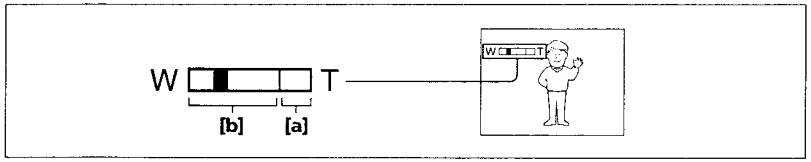
Desplace ligeramente la palanca de alimentación del zoom para obtener un efecto de zoom más lento. Si desea obtener un efecto de zoom más rápido, desplace dicha palanca en mayor medida.

**Cuando filme un objeto con un zoom telefoto**

Si no puede enfocar nítidamente cuando utilice el zoom telefoto en su posición extrema, desplace la palanca de alimentación del zoom al lado "W" hasta obtener un enfoque nítido. Es posible filmar un objeto que se encuentre a una distancia de al menos 80 cm (aproximadamente 2 5/8 pies) de la superficie del objetivo en la posición de telefoto, o de 1 cm (aproximadamente 1/2 pulgada) en la posición de gran angular.

**Notas sobre el zoom digital**

- El zoom de más de 21x se realiza digitalmente (42x) y la calidad de imagen se deteriora a medida que se avanza hacia el lado "T". Si no desea utilizar el zoom digital, ajuste la función D ZOOM en OFF en el sistema de menú.
- El lado derecho **[a]** del indicador de alimentación del zoom muestra el área de zoom digital, mientras que el izquierdo **[b]** muestra el área de zoom óptico. Si ajusta la función D ZOOM en OFF, el área **[a]** desaparecerá.

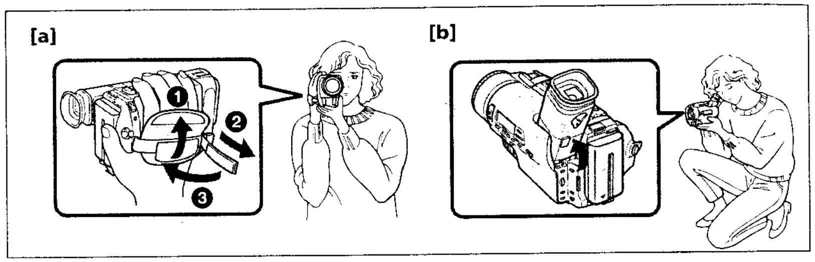


## Hints for better shooting

## Consejos para filmar mejor

For hand-held shots, you'll get better results by holding the camcorder according to the following suggestions:

Para filmar con la cámara en las manos, obtendrá mejores resultados si sujeta la videocámara según las siguientes sugerencias:



- Hold the camcorder firmly and secure it with the grip strap so that you can easily manipulate the controls with your thumb **[a]**.
- Place your right elbow against your side.
- Place your left hand under the camcorder to support it. Be sure to not touch the built-in microphone.
- Place your eye firmly against the viewfinder eyecup.
- Use the viewfinder frame as a guide to determine the horizontal plane.
- You can also record in a low position to get an interesting angle. Lift the viewfinder up for recording from a low position **[b]**.

**Place the camcorder on a flat surface or use a tripod**

Try placing the camcorder on a table top or any other flat surface of suitable height. If you have a tripod for a still camera, you can also use it with the camcorder.

When attaching a non-Sony tripod, make sure that the length of the tripod screw is less than 6.5 mm (9/32 inch). Otherwise, the screw may damage the inner parts of the camcorder.

- Sujete la videocámara firmemente y fíjela con la correa para poder manejar los controles fácilmente con el pulgar **[a]**.
- Mantenga el brazo con el que sujeta la videocámara pegado al costado.
- Coloque la mano izquierda debajo de la videocámara para sostenerla. Evite tocar el micrófono incorporado.
- Apoye el ocular del visor electrónico firmemente contra su ojo.
- Emplee el cuadro del visor electrónico como referencia para determinar el plano horizontal.
- También es posible grabar desde posiciones bajas para obtener un ángulo interesante. Levante el visor electrónico para grabar desde posiciones bajas **[b]**.

**Coloque la videocámara sobre una superficie plana o emplee un trípode**

Sitúe la videocámara sobre una mesa o cualquier otra superficie plana con la altura adecuada. Si dispone de un trípode para cámara fija, también puede utilizarlo con la videocámara.

Al fijar un trípode que no sea Sony, compruebe que la longitud del tornillo de trípode sea inferior a 6,5 mm (9/32 de pulgada), ya que en caso contrario el tornillo puede dañar los componentes internos de la videocámara.

**If you wear glasses**
You can bend back the eyecup to get a vetter view of viewfinder **[c]**.

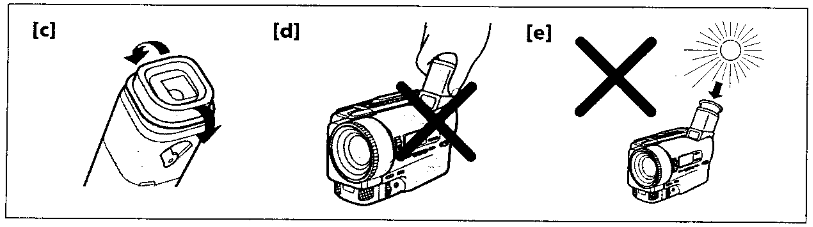
**Cautions on the viewfinder**

- Do not pick up the camcorder by the viewfinder **[d]**.
- Do not place the camcorder so as to point the viewfinder toward the sun. The inside of the viewfinder may be damaged. Be careful when placing the camcorder under sunlight or by a window **[e]**.

**Si utiliza gafas**
Es posible doblar hacia atrás el ocular con el fin de obtener una mejor visualización del visor electrónico **[c]**.

**Precauciones sobre el visor electrónico**

- No coja la videocámara por el visor electrónico **[d]**.
- Sitúe la videocámara de forma que el visor electrónico no quede orientado hacia el sol. En caso contrario, el interior de dicho visor puede dañarse.
  Tenga cuidado cuando sitúe la videocámara bajo la luz solar o junto a una ventana **[e]**.



**Notes on the colour viewfinder — CCD-TR3300E only**

- The colour viewfinder is made with high-precision technology. However, black points or bright points of light (red, blue, or green) may appear on the colour viewfinder. These points are not recorded on the tape. This is not a malfunction. (Effective dots : more than 99.99%).
- The finder power save function sometimes does not operate due to the effects of sunlight or flouressent light.
- In direct sunlight, the picture in the viewfinder looks brighter by the lighting aperture. The colour of the picture in the viewfinder is variable in such a case.

**Notas sobre el visor electrónico en color — sólo CCD-TR3300E**

- El visor electrónico en color está fabricado con tecnología de alta precisión. No obstante, es posible que aparezcan puntos negros o brillantes de luz (rojos, azules o verdes) en dicho visor. Estos puntos no se graban en la cinta ni se trata de un fallo de funcionamiento. (Puntos efectivos: más del 99,99%).
- La función de ahorro de energía del visor electrónico no se activa en determinadas ocasiones debido al efecto causado por la luz solar o las luces fluorescentes.
- Con luz solar directa, el brillo de la imagen del visor electrónico aumenta por la apertura de iluminación. En este caso, el color de dicha imagen será variable.

## Checking the recorded picture

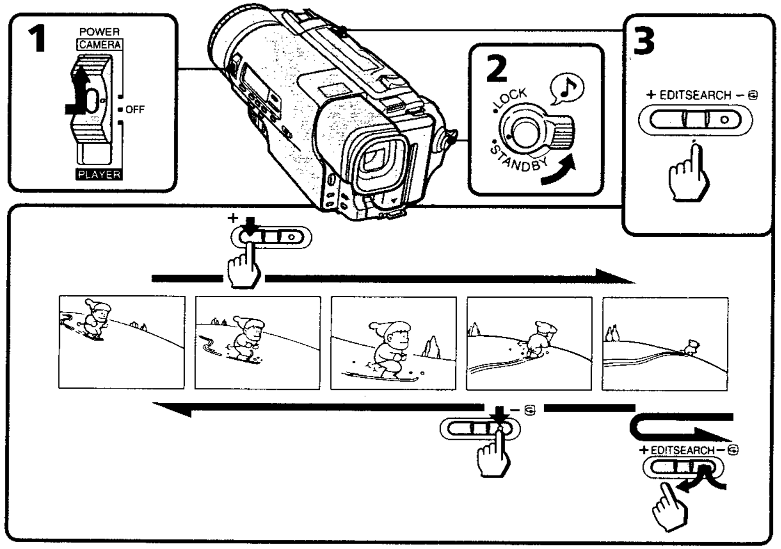
Using EDITSEARCH, you can review the last recorded scene or check the recorded picture in the viewfinder.

**(1)** While pressing the small green button on the POWER switch, set it to CAMERA.
**(2)** Turn STANDBY up.
**(3)** Press the – ⊜ side of EDITSEARCH momentarily; the last few seconds of the recorded portion play back (**Rec Review**).
Hold down the – side of EDITSEARCH until the camcorder goes back to the scene you want. The last recorded portion is played back. To go forward, hold down the + side (**Edit Search**).

## Comprobación de imágenes grabadas

Con la función EDITSEARCH, es posible revisar la última escena grabada o comprobar la imagen grabada en el visor electrónico.

**(1)** Ajuste el interruptor POWER en CAMERA mientras pulsa el botón verde pequeño del mismo.
**(2)** Gire STANDBY hacia arriba.
**(3)** Pulse momentáneamente el lado – ⊜ de EDITSEARCH para reproducir los últimos segundos de la parte grabada (**revisión de grabación**).
Mantenga pulsado el lado – de EDITSEARCH para que la videocámara retroceda hasta la escena que desee. La última parte grabada se reproduce. Para avanzar, mantenga pulsado el lado + (**búsqueda de edición**).



### To stop playback
Release EDITSEARCH.

### To begin re-recording
Press START/STOP. Re-recording begins from the point you released EDITSEARCH. Provided you do not eject the tape, the transition between the last scene you recorded and the next scene you record will be smooth.

### Para detener la reproducción
Suelte EDITSEARCH.

### Para reanudar la grabación
Pulse START/STOP para reanudar la grabación a partir del punto donde ha dejado de pulsar EDITSEARCH. Siempre que no expulse la cinta, la transición entre la última escena grabada y la siguiente se realizará con uniformidad.

# Connections for playback

# Conexiones para la reproducción

You can use this camcorder as a VCR by connecting it to your TV for playback. There are some ways to connect the camcorder to your TV. When monitoring the playback picture by connecting the camcorder to your TV, we recommend you to use mains for the power source.

## Connecting directly to a VCR/TV with Video/Audio input jacks

### If your TV is already connected to a VCR

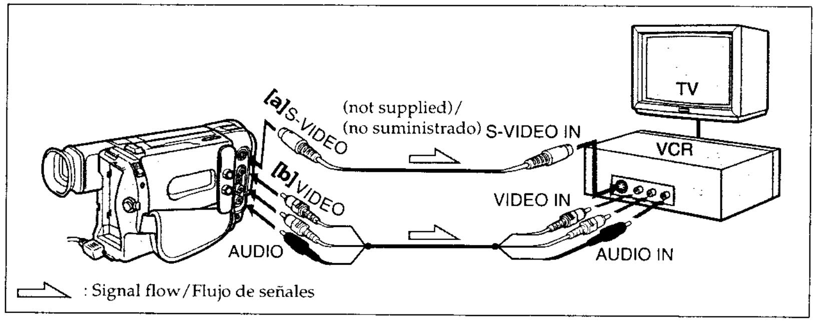
Open the jack cover and connect the camcorder to the LINE IN inputs on the VCR by using the supplied A/V connecting cable. Set the input selector on the VCR to LINE. Set the TV/VCR selector on the TV to VCR.
If you are going to connect the camcorder using the S video cable (not supplied) **[a]**, you do not need to connect the yellow (video) plug of the A/V connecting cable **[b]**.
If you use a monaural A/V connecting cable, you will get monaural sound.

Es posible emplear esta videocámara como una videograbadora para realizar reproducciones si la conecta al televisor. Existen varias formas para conectar la videocámara al televisor. Para controlar la imagen de reproducción mediante la conexión de la videocámara al televisor, se recomienda emplear una toma de red como fuente de alimentación.

## Conexión directa a una videograbadora/televisor con tomas de entrada de audio/vídeo

### Si ya ha conectado el televisor a una videograbadora

Abra la cubierta de la toma y conecte la videocámara a las entradas LINE IN de la videograbadora con el cable de conexión de A/V suministrado. Ajuste el selector de entrada de la videograbadora en LINE y el selector TV/VCR del televisor en VCR.
Si va a conectar la videocámara con el cable de S vídeo (no suministrado) **[a]**, no es preciso conectar el enchufe amarillo (vídeo) del cable de conexión de A/V **[b]**.
Si emplea un cable de conexión de A/V monofónico, el sonido será monofónico.



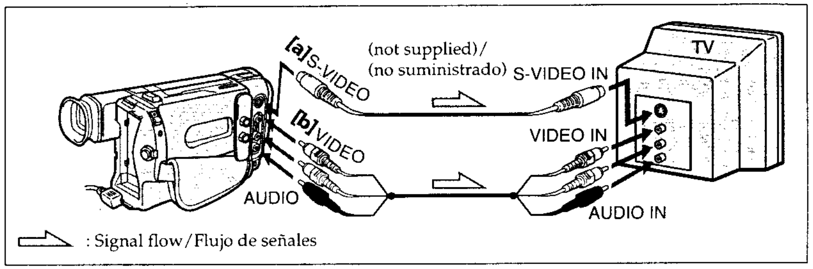
⇨ : Signal flow/Flujo de señales

### If you connect directly to TV

Open the jack cover and connect the camcorder to the inputs on the TV by using the supplied A/V connecting cable. Set the TV/VCR selector on the TV to VCR.

### Si realiza la conexión directamente al televisor

Abra la cubierta de la toma y conecte la videocámara a las entradas del televisor con el cable de conexión de A/V suministrado. Ajuste el selector TV/VCR del televisor en VCR.



⇨ : Signal flow/Flujo de señales

### If your VCR or TV is a monaural type

Connect only the white plug for audio on both the camcorder and the VCR or the TV. With this connection, the sound is monaural.

### Si la videograbadora o el televisor es de tipo monofónico

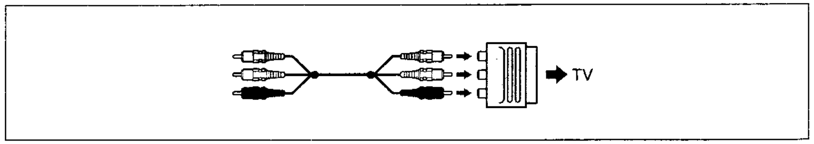
Conecte sólo el enchufe blanco de audio de la videocámara y de la videograbadora o del televisor. Con esta conexión, el sonido será monofónico.

### If your VCR/TV has a 21-pin connector (EUROCONNECTOR)

Use the supplied 21-pin adaptor.

### Si la videograbadora o el televisor dispone de un conector de 21 pines (EUROCONNECTOR)

Utilice el adaptador de 21 pines suministrado.



### To connect to a VCR or TV without Video/Audio input jacks

Use an RFU adaptor (not supplied).

### Para realizar la conexión a una videograbadora o a un televisor sin tomas de entrada de audio/vídeo

Utilice un adaptador RFU (no suministrado).

# Playing back a tape

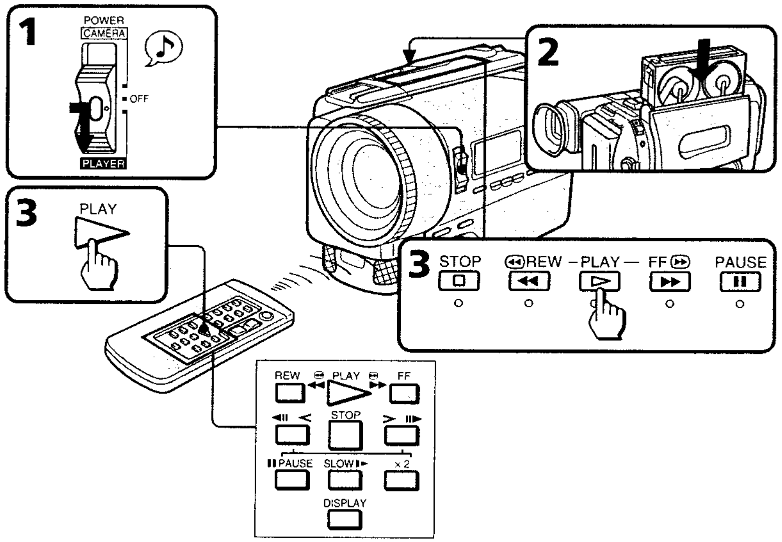
# Reproducción de cintas

You can monitor the playback picture in the viewfinder. You can also monitor a picture on a TV screen, after connecting the camcorder to a TV or VCR.

**(1)** While pressing the small green button on the POWER switch, set it to PLAYER. The tape transport buttons light up.
**(2)** Insert the recorded tape with the window facing out.
**(3)** Press ▷ to start playback.

Es posible controlar la imagen de reproducción en el visor electrónico. También es posible controlar imágenes en la pantalla de un televisor después de conectar la videocámara a un televisor o a una videograbadora.

**(1)** Ajuste el interruptor POWER en PLAYER mientras pulsa el botón verde pequeño del mismo. Los botones de transporte de cinta se iluminan.
**(2)** Inserte la cinta grabada con la ventana orientada hacia fuera.
**(3)** Pulse ▷ para iniciar la reproducción.



**To stop playback,** press □.
**To rewind the tape,** press ◀◀.
**To fast-forward the tape rapidly,** press ▶▶.

**Para detener la reproducción,** pulse □.
**Para rebobinar la cinta,** pulse ◀◀.
**Para que la cinta avance rápidamente,** pulse ▶▶.

### Using the remote commander

You can control playback using the supplied Remote Commander. Before using the Remote Commander, insert the R6 (size AA) batteries.

**To display the viewfinder screen indicators on the TV**
Press DISPLAY on the Remote Commander. To erase the indicators, press DISPLAY again.

**To monitor the sound while viewing the playback picture in the viewfinder**
Connect headphones (not supplied) to the ∩ jack.

## Various playback modes

### To view a still picture (playback pause)

Press **II** during playback. To resume playback, press **II** or ▷.

### To locate a scene (picture search)

Keep pressing ◀◀ or ▶▶ during playback. To resume normal playback, release the button.

### To monitor the high-speed picture while advancing the tape or rewinding (skip scan)

Keep pressing ◀◀ while rewinding or ▶▶ while advancing the tape. To resume normal playback, press ▷.

### To view the picture at 1/5 speed (slow playback)

Press SLOW I▶ on the Remote Commander during playback. To resume normal playback, press ▷. If slow playback lasts for about 1 minute, it shifts to normal speed automatically.

### To view the picture at double speed

For double speed playback in the reverse direction, press ◀II<, then press x2 on the Remote Commander during playback. For double speed playback in the forward direction, press >II▶, then press x2 during playback. To resume normal playback, press ▷.

### Uso del mando a distancia

Es posible controlar la reproducción con el mando a distancia suministrado. Antes de emplearlo, inserte las pilas R6 (tamaño AA).

**Para mostrar los indicadores de pantalla del visor electrónico en el televisor**
Pulse DISPLAY en el mando a distancia. Para que los indicadores desaparezcan, vuelva a pulsar DISPLAY.

**Para controlar el sonido mientras visualiza la imagen de reproducción en el visor electrónico**
Conecte los auriculares (no suministrados) a la toma ∩.

## Diversos modos de reproducción

### Para visualizar imágenes fijas (pausa de reproducción)

Pulse **II** durante la reproducción. Para reanudar ésta, pulse **II** o ▷.

### Para localizar una escena (búsqueda de imágenes)

Mantenga pulsado ◀◀ o ▶▶ durante la reproducción. Para reanudar la reproducción normal, suelte el botón.

### Para controlar la imagen a alta velocidad mientras avanza o rebobina la cinta (exploración con omisión)

Mantenga pulsado ◀◀ mientras rebobina o ▶▶ mientras avanza la cinta. Para reanudar la reproducción normal, pulse ▷.

### Para visualizar la imagen a un 1/5 de la velocidad normal (reproducción lenta)

Pulse SLOW I▶ en el mando a distancia durante la reproducción. Para reanudar la reproducción normal, pulse ▷. Si la reproducción lenta dura 1 minuto aproximadamente, ésta cambiará automáticamente a velocidad normal.

### Para visualizar la imagen a velocidad doble

Para realizar la reproducción a velocidad doble en sentido regresivo, pulse ◀II< y, a continuación, x2 en el mando a distancia durante la reproducción. Para realizar la reproducción a velocidad doble en sentido progresivo, pulse >II▶ y, a continuación, x2 durante la reproducción. Para reanudar la reproducción normal, pulse ▷.

### To view the picture frame-by-frame

Press ◀II< or >II▶ on the Remote Commander in playback pause mode. If you keep pressing the button, you can view the picture at 1/25 speed. To resume normal playback, press ▷.

### To change the playback direction

Press ◀II < on the Remote Commander for reverse direction or > II▶ on the Remote Commander for forward direction during playback. To resume normal playback, press ▷.

### To select the playback sound

Change the "HiFi SOUND" mode setting in the menu system.

**Notes on playback**

- Streaks appear and the sound is muted in the various playback modes.
- When playback pause mode lasts for 5 minutes, the camcorder automatically enters stop mode.
- Horizontal noise appears at the centre of the screen when you play back a tape in reverse or in various speed if the RC time code or the Data Code is displayed on the screen. This is normal.
- The playback picture may be shaken up and down in slow playback. This is normal.

### Para visualizar la imagen fotograma a fotograma

Pulse ◀II< o >II▶ en el mando a distancia durante el modo de pausa de reproducción. Si mantiene el botón pulsado, podrá visualizar la imagen a 1/25 de la velocidad normal. Para reanudar la reproducción normal, pulse ▷.

### Para cambiar el sentido de reproducción

Pulse ◀II < en el mando a distancia para cambiar al sentido regresivo o > II▶ para cambiar al sentido progresivo durante la reproducción.
Para reanudar la reproducción normal, pulse ▷.

### Para seleccionar el sonido de reproducción

Cambie el ajuste de modo de "HiFi SOUND" en el sistema de menú.

**Notas sobre la reproducción**

- En los diferentes modos de reproducción aparecen rayas y el sonido desaparece.
- Si el modo de pausa de reproducción dura 5 minutos aproximadamente, la videocámara introduce automáticamente el modo de parada.
- Si el código de tiempos RC o el código de datos se muestra en pantalla, aparece ruido horizontal en el centro de la pantalla cuando se reproduce una cinta en sentido regresivo o a distintas velocidades. Esto es normal.
- La imagen de reproducción puede presentar vibraciones arriba y abajo durante el modo de reproducción lenta. Esto es normal.

## Displaying the date or time when you recorded – data code function

Even if you did not record the date or time when you were recording, you can display the date or time when you recorded (Data Code) on the TV during playback or editing. The Data Code is also displayed in the viewfinder and the display window.

## Visualización de la fecha o la hora de grabación – función de código de datos

Es posible mostrar la fecha o la hora de grabación (código de datos) en el televisor durante la reproducción o la edición, aunque no haya registrado dichos elementos durante la grabación. El código de datos también aparece en el visor electrónico y en el visor principal.

### To display the date when you recorded

Press DATE on the camcorder, or press DATA CODE on the Remote Commander. To make the date disappear, press DATE again or DATA CODE twice.

### To display the time when you recorded

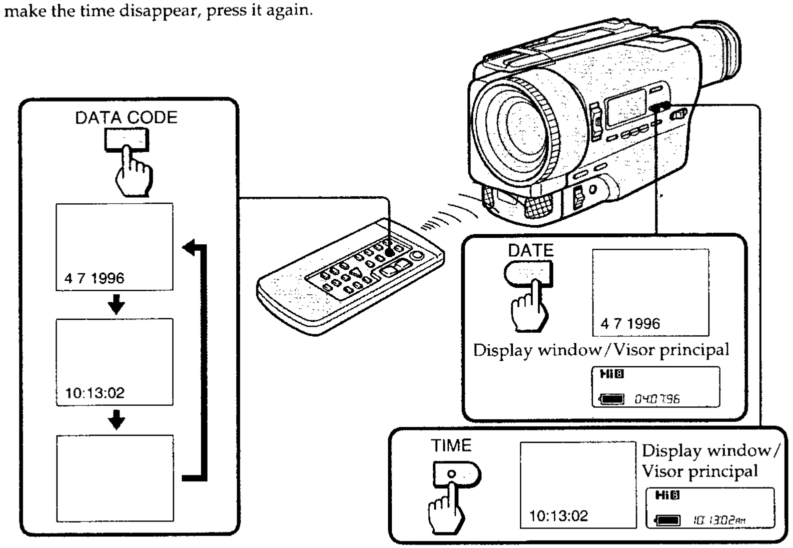
Press TIME on the camcorder, or press DATA CODE on the Remote Commander twice. To make the time disappear, press it again.

### Para mostrar la fecha de grabación

Pulse DATE en la videocámara o DATA CODE en el mando a distancia. Para que la fecha desaparezca, vuelva a pulsar DATE o DATA CODE dos veces.

### Para mostrar la hora de grabación

Pulse TIME en la videocámara o DATA CODE en el mando a distancia dos veces. Para que la hora desaparezca, vuelva a pulsar dichos botones.



**When bars (--:--:--) appear**

- A blank portion of the tape is being played back.
- The tape was recorded by a camcorder without the Data Code function.
- The tape was recorded by a camcorder without having date and time set.
- The tape is unreadable due to tape damage or noise.
- The tape was recorded in LP mode.
- The tape is being played back in variable speed (Slow Playback, etc.)
- An index signal is marked, the RC time code is written, or PCM after recording is made on the tape.

**Si aparecen barras (--:--:--)**

- Se está reproduciendo una parte sin grabación de la cinta.
- La cinta se ha grabado con una videocámara desprovista de la función de código de datos.
- La cinta se ha grabado sin haber ajustado la fecha y la hora en la videocámara.
- La cinta es ilegible debido a daños o ruido de dicha cinta.
- La cinta se ha grabado en modo LP.
- La cinta está reproduciéndose a velocidad variable (reproducción lenta, etc.)
- Se ha marcado una señal de índice, se ha introducido el código de tiempos RC o se ha reproducido la cinta en modo PCM después de la grabación.

# Using alternative power sources

You can choose any of the following power sources for your camcorder: battery pack, mains, and 12/24 V car battery. Choose the appropriate power source depending on where you want to use your camcorder.

| Place | Power source | Accessory to be used |
|---|---|---|
| **Indoors** | Mains | Supplied AC power adaptor |
| **Outdoors** | Battery pack | Battery pack NP-F530 (supplied), NP-F730 |
| **In the car** | 12 V or 24 V car battery | Car battery charger DC-V515 |

### Note on power sources

Disconnecting the power source or removing the battery pack during recording or playback may damage the inserted tape. If this happens, restore the power supply again immediately.

## Using the mains

To use the supplied AC power adaptor:

**(1)** Connect the AC mains lead to mains, then connect the connecting cord to the DC OUT jack on the AC power adaptor.

**(2)** Insert the connecting plate into the guides at the bottom of the camcorder.

# Uso de fuentes de alimentación alternativas

Es posible elegir cualquiera de las siguientes fuentes de alimentación para la videocámara: paquete de batería, corriente doméstica y batería de automóvil de 12/24 V. Elija la fuente de alimentación adecuada en función del lugar donde desee emplear la videocámara.

| Lugar | Fuente de alimentación | Accesorio necesario |
|---|---|---|
| **Interiores** | Toma de red | Adaptador de alimentación de CA suministrado |
| **Exteriores** | Paquete de batería | Paquete de batería NP-F530 (suministrado), NP-F730 |
| **En el automóvil** | Batería de automóvil de 12 V o 24 V | Cargador de batería de automóvil DC-V515 |

### Nota sobre las fuentes de alimentación

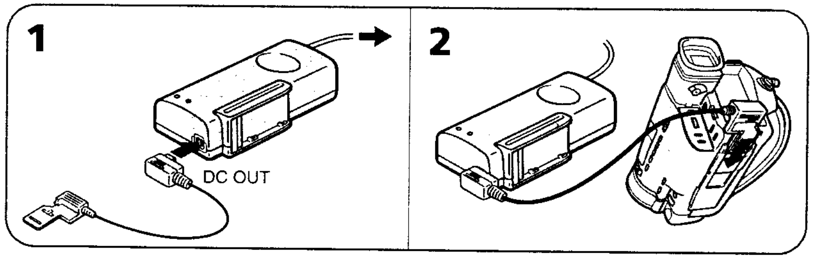
Si desconecta la fuente de alimentación o si retira el paquete de batería durante la grabación o la reproducción, es posible que dañe la cinta insertada. Si esto ocurre, restablezca el suministro de alimentación inmediatamente.

## Uso de corriente doméstica

Para emplear el adaptador de alimentación de CA suministrado:

**(1)** Conecte el cable de alimentación de CA a una toma de red y, a continuación, el cable de conexión a la toma DC OUT del adaptador de alimentación de CA.

**(2)** Inserte la placa de conexión en las guías situadas en la parte inferior de la videocámara.



# Using alternative power sources

### Charging the battery pack

After connecting the mains lead to the mains and setting the POWER switch on the camcorder to OFF, you can charge the battery pack in either of the following two ways:
(When charging begings, the CHARGE lamp lights.)

- Charging the battery attached to the camcorder
  Leave the battery pack attached to the camcorder. (The NP-F530 battery pack requires about 210 minutes for a full charge and about 150 minutes for a normal charge.)
- Charging two battery packs at the same time
  Attach one battery pack to the AC power adaptor and other to the camcorder. Both are charged simultaneously. When charged, both lamps go out (normal charge). If either lamp is still lit, both batteries are not charged (the NP-F530 battery packs require about 240 minutes for a full charge and about 180 minutes for a normal charge).

### Notes on the VTR/CAMERA lamp

- The VTR/CAMERA lamp will remain lit for a while even if the unit is unplugged after use. This is normal.
- If the VTR/CAMERA lamp does not light, disconnect the mains lead. After about 1 minute, reconnect the mains lead.

### To remove the connecting plate

Pull out the connecting plate by the plate. Never pull the connecting cord itself.

### WARNING

The mains lead must only be changed at a qualified service shop.

### PRECAUTION

The set is not disconnected from the AC power source (mains) as long as it is connected to the mains, even if the set itself has been turned off.

# Uso de fuentes de alimentación alternativas

### Carga del paquete de batería

Después de conectar el cable de alimentación a la toma de corriente y de ajustar el interruptor POWER de la videocámara en OFF, es posible cargar el paquete de batería de cualquiera de las siguientes formas:
(Al iniciarse la carga, el indicador CHARGE se ilumina.)

- Cargar el paquete fijado a la videocámara. Deje el paquete fijado a la videocámara. (El paquete de batería NP-F530 requiere 210 minutos aproximadamente para la carga completa y 150 minutos aproximadamente para la normal.)
- Cargar simultáneamente dos paquetes de batería. Fije un paquete de batería al adaptador de alimentación de CA y el otro a la videocámara. De esta forma, los dos se cargarán simultáneamente. Una vez cargados, los dos indicadores se apagarán (carga normal). Si alguno de los indicadores permanece encendido significa que los dos paquetes no se han cargado (los paquetes de batería NP-F530 requieren unos 240 minutos para la carga completa y unos 180 minutos para la normal).

### Notas sobre el indicador VTR/CAMERA

- Este indicador permanecerá iluminado durante unos segundos tras desenchufar la unidad después de su uso. Esto es normal.
- Si este indicador no se ilumina, desconecte el cable de alimentación y vuelva conectarlo después de 1 minuto aproximadamente.

### Para extraer la placa de conexión

Tire de ella y nunca del propio cable de conexión.

### ADVERTENCIA

El cable de alimentación debe ser sustituido únicamente en un centro de asistencia técnica especializado.

### PRECAUCION

La unidad no estará desconectada de la fuente de alimentación de CA (toma de red) mientras esté conectada a la toma de corriente, aunque la haya apagado.

## Using the battery case

Use the battery case (suplied) and six LR6 (size AA) Sony Alkaline batteries (not supplied).

**(1)** Remove the battery holder from the battery case.

**(2)** Insert six new alkaline batteries into the battery holder, following the marking on the holder to be sure the batteries are installed in the correct direction.

**(3)** Insert the battery holder with the alkaline batteries.

**(4)** Insert the battery case with the alkaline batteries to the battery mounting surface of the camcorder in the same way as the battery pack.

## Uso del estuche de pilas

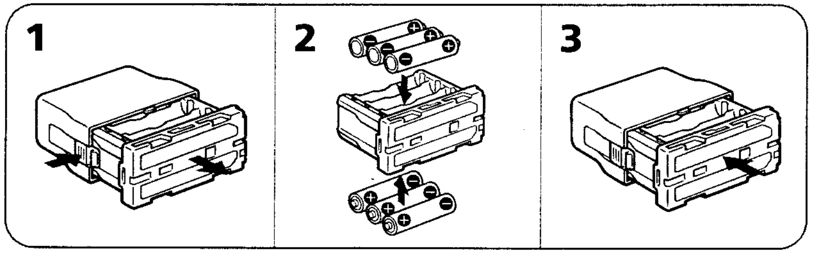
Emplee este estuche (suministrado) con seis pilas alcalinas Sony LR6 (tamaño AA) (no suministradas).

**(1)** Extraiga el portapilas del estuche de pilas.

**(2)** Inserte seis pilas alcalinas nuevas en el portapilas observando las marcas existentes en el mismo con el fin de instalar las pilas en la dirección correcta.

**(3)** Inserte el portapilas con las pilas alcalinas.

**(4)** Inserte el estuche de pilas con las pilas alcalinas en la superficie de montaje de pilas de la videocámara de la misma forma que el paquete de batería.



### Battery life

Using Sony alkaline batteries at 25°C (77°F).

| | Continuous recording time | Typical recording time |
|---|---|---|
| CCD-TR3300E | 70 min. | 40 min. |
| CCD-TR2200E | 80 min. | 50 min. |

**Notes on the battery life**

- The battery life may be shorter depending on the using environment.
- The battery lives are estimates. The battery life may be shorter depending on the storage condition of the battery before being purchased and temperature.
- You may not use the battery case in cold environment.

### Duración de las pilas

Empleo de pilas alcalinas Sony a una temperatura de 25°C (77°F).

| | Tiempo de grabación continua | Tiempo de grabación normal |
|---|---|---|
| CCD-TR3300E | 70 min. | 40 min. |
| CCD-TR2200E | 80 min. | 50 min. |

**Notas sobre la duración de las pilas**

- La duración de las pilas puede reducirse en función del lugar de empleo.
- El tiempo de duración de las pilas es aproximado. Su duración puede reducirse en función de la temperatura y de las condiciones de almacenamiento de la pila antes de su adquisición.
- Es posible que no pueda emplear el estuche de pilas en ambientes fríos.

**To remove the battery case**

The battery case is removed in the same way as the battery pack.

## Using a car battery

Use the DC-V515 car battery charger (not supplied). Connect the car battery cord to the cigarette lighter socket of a car (12 V or 24 V). Connect the car battery cord to the camcorder in the same way as you connect the AC power adaptor.

This mark indicates that this product is a genuine accessory for Sony video products.

When purchasing Sony video products, Sony recommends that you purchase accessories with this "GENUINE VIDEO ACCESSORIES" mark.

**Para extraer el estuche de pilas**

El estuche de pilas se extrae de la misma forma que el paquete de batería.

## Uso de batería de automóvil

Emplee el cargador de batería de automóvil DC-V515 (no suministrado). Conecte el cable de batería de automóvil a la clavija del encendedor del automóvil (12 V o 24 V). Conecte dicho cable a la videocámara de la misma forma que conecta el adaptador de alimentación de CA.

Esta marca indica que este producto es un accesorio genuino para los productos de vídeo Sony.

Al adquirir productos de vídeo Sony, se recomienda que los accesorios adquiridos presenten la marca "GENUINE VIDEO ACCESSORIES".

# Changing the mode settings

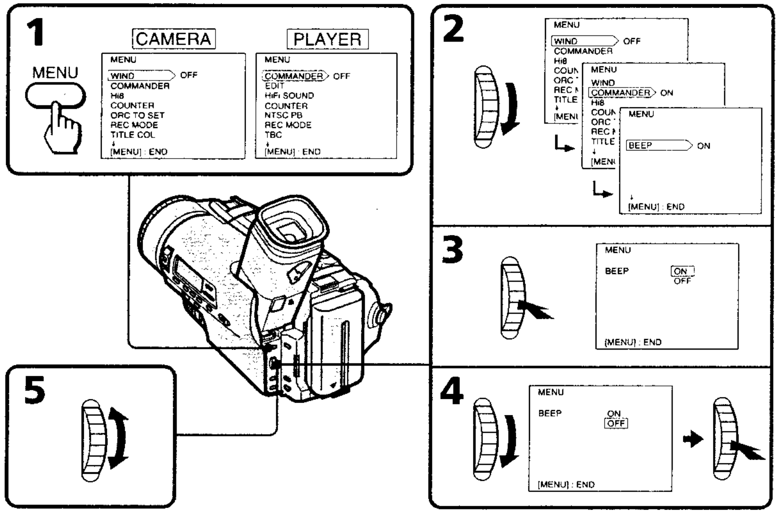
You can change the mode settings in the menu system to further enjoy the features and functions of the camcorder.

**(1)** Press MENU to display the menu.
**(2)** Turn the control dial so that the desired item is highlighted white.
**(3)** Press the control dial. The setting menu appears.
**(4)** Turn the control dial to highlight a setting, and press the control dial to select it.
**(5)** If you want to change the other modes, repeat steps 2 to 4.
**(6)** Press MENU to erase the menu display.

# Cambio de los ajustes de modo

Es posible cambiar los ajustes de modo en el sistema de menú para disfrutar en mayor medida de las características y funciones de la videocámara.

**(1)** Pulse MENU para que aparezca el menú.
**(2)** Gire el dial de control para resaltar en blanco el elemento que desee.
**(3)** Pulse el dial de control para que aparezca el menú de ajustes.
**(4)** Gire el dial de control para resaltar un ajuste y, a continuación, púlselo para seleccionarlo.
**(5)** Si desea cambiar los otros modos, repita los pasos 2 a 4.
**(6)** Pulse MENU para que el menú desaparezca.



## Selecting the mode setting of each item

### Items for both CAMERA and PLAYER modes

**COUNTER <NORMAL/TIME CODE>**
- Normally select NORMAL.
- Select TIME CODE to display the RC time code in order to edit more precisely.

**COMMANDER <ON/OFF>**
- Select ON when using the supplied Remote Commander for the camcorder.
- Select OFF when not using the Remote Commander.

**BEEP <ON/OFF>**
- Select ON so that beeps sound when you start/stop recording, etc.
- Select OFF when you do not want to hear the beep sound.

**VF BRIGHT*(CCD-TR3300E only)**
Select this item to adjust the brightness of the viewfinder. The viewfinder becomes brighter when you turn the control dial up, and darker when you turn the control dial down.

**VF PW-SAVE* <ON/OFF> (CCD-TR3300E only)**
- Select ON to activate finder power save function.
- Select OFF to not use finder power save function.

### Items for CAMERA mode only

**WIND <ON/OFF>**
- Select ON to reduce wind noise when recording in strong wind.
- Normally select OFF.

**Hi8 <AUTO/OFF>**
- Normally select AUTO to have the camcorder automatically set the recording mode (Hi8 or standard 8 mm) depending upon the cassette type being used.
- Select OFF to record a Hi8 tape in standard 8 mm format.

## Selección del ajuste de modo de cada elemento

### Elementos de los modos CAMERA y PLAYER

**COUNTER <NORMAL/TIME CODE>**
- Normalmente, seleccione NORMAL.
- Seleccione TIME CODE para mostrar el código de tiempos RC con el fin de editar con mayor precisión.

**COMMANDER <ON/OFF>**
- Seleccione ON cuando emplee el mando a distancia suministrado para controlar la videocámara.
- Seleccione OFF cuando no emplee el mando a distancia.

**BEEP <ON/OFF>**
- Seleccione ON para que la unidad emita pitidos al iniciar o detener la grabación, etc.
- Seleccione OFF si no desea oír los pitidos.

**VF BRIGHT*(sólo CCD-TR3300E)**
Seleccione este elemento para ajustar el brillo del visor electrónico. El brillo del visor electrónico aumentará al girar el dial de control hacia arriba y disminuirá al girar dicho control hacia abajo.

**VF PW-SAVE* <ON/OFF> (sólo CCD-TR3300E)**
- Seleccione ON para activar la función de ahorro de energía del visor electrónico.
- Seleccione OFF si no desea emplear dicha función.

### Elementos del modo CAMERA solamente

**WIND <ON/OFF>**
- Seleccione ON para reducir el ruido del viento cuando grabe con viento fuerte.
- Normalmente seleccione OFF.

**Hi8 <AUTO/OFF>**
- Normalmente seleccione AUTO para que la videocámara ajuste automáticamente el modo de grabación (Hi8 u 8 mm estándar) en función del tipo de videocassette que se emplee.
- Seleccione OFF para grabar una cinta Hi8 en el formato estándar de 8 mm.

**ORC TO SET* <ORC ON>**
Select ORC ON to automatically adjust the recording condition to get the best possible recording.

**REC MODE* <SP/LP>**
- Select SP when recording in SP (standard play) mode.
- Select LP when recording in LP (long play) mode.

**D ZOOM* <ON/OFF>**
- Select ON to activate digital zooming.
- Select OFF to not use the digital zoom. The camera goes back to 21x zoom.

**REC LAMP* <ON/OFF>**
- Select OFF when you do not want the camera recording/battery lamp at the front of the unit to light up.
- Normally select ON.

**AE SHIFT***
Select this item to adjust the brightness of the picture.

**TITLE COL* <BLUE/ GREEN/ CYAN/ RED/ VIOLET/ YELLOW/ WHITE>**
Select the colour of the title.

**TITLE POS* <CENTER/BOTTOM>**
- Select CENTER to centre the title in the picture.
- Select BOTTOM to position the title at the bottom of the picture.

**TITLE LANG* <ENGLISH/ FRANÇAIS/ ESPAÑOL/ PORTUGUÊS/ DEUTSCH/ NEDERLANDS/ ITALIANO>**
Select the language of the preset titles.

**TITLE 1 SET* TITLE 2 SET***
Select to store your own original titles.

**CLOCK SET***
Select this item to reset the date or time.

**ORC TO SET* <ORC ON>**
Seleccione ORC ON para ajustar automáticamente la condición de grabación con el fin de obtener los mejores resultados posibles de grabación.

**REC MODE* <SP/LP>**
- Seleccione SP cuando grabe en modo SP (reproducción estándar).
- Seleccione LP cuando grabe en modo LP (reproducción de larga duración).

**D ZOOM* <ON/OFF>**
- Seleccione ON para activar el zoom digital.
- Seleccione OFF si no desea emplear el zoom digital. La cámara volverá al zoom de 21x.

**REC LAMP* <ON/OFF>**
- Seleccione OFF si no desea que se ilumine el indicador de batería y grabación de la cámara situado en la parte frontal de la unidad.
- Normalmente seleccione ON.

**AE SHIFT***
Seleccione este elemento para ajustar el brillo de la imagen.

**TITLE COL* <BLUE/ GREEN/ CYAN/ RED/ VIOLET/ YELLOW/ WHITE> (azul/verde/cian/ rojo/violeta/amarillo/blanco)**
Seleccione el color del título.

**TITLE POS* <CENTER/BOTTOM>**
- Seleccione CENTER para centrar el título en la imagen.
- Seleccione BOTTOM para situar el título en la parte inferior de la imagen.

**TITLE LANG* <ENGLISH/ FRANÇAIS/ ESPAÑOL/ PORTUGUÊS/DEUTSCH/ NEDERLANDS/ ITALIANO>**
Seleccione el idioma de los títulos definidos.

**TITLE 1 SET* TITLE 2 SET***
Realice la selección para almacenar sus propios títulos.

**CLOCK SET***
Seleccione este elemento para reajustar la fecha o la hora.

## Changing the mode settings

## Cambio de los ajustes de modo

### Items for PLAYER mode only

**EDIT <ON/OFF>**
- Select ON to minimize picture deterioration when editing.
- Normally select OFF.

**HiFi SOUND <STEREO/1/2>**
- Normally select STEREO.
- Select 1 or 2 to play back a dual sound track tape.

**NTSC PB <ON PAL TV/NTSC 4.43>**
- Normally select ON PAL TV.
- Select NTSC 4.43 when playing back a tape recorded in the NTSC colour system. If you have a multi-system TV, you can see an NTSC-recorded tape also on the TV.

**TBC* <ON/OFF>**
- Select ON to correct for jitter.
- Select OFF to not correct for jitter. The picture may not be steady when you playback.

**DNR* <ON/OFF>**
- Select ON to reduce picture noise.
- Select OFF to not reduce noise.

* These settings are retained even when the battery is removed, as long as the lithium battery is in place.

**Note on TBC setting**
Set TBC to OFF when playing back:
- A tape you have dubbed over.
- A tape on which you recorded the signal of a TV game or similar machine.

### Elementos del modo PLAYER solamente

**EDIT <ON/OFF>**
- Seleccione ON para minimizar el deterioro de imagen al editar.
- Normalmente seleccione OFF.

**HiFi SOUND <STEREO/1/2>**
- Normalmente seleccione STEREO.
- Seleccione 1 o 2 para reproducir cintas de pistas de sonido dual.

**NTSC PB <ON PAL TV/NTSC 4.43>**
- Normalmente seleccione ON PAL TV.
- Seleccione NTSC 4.43 cuando reproduzca cintas grabadas en el sistema de color NTSC. Si dispone de un televisor de sistema múltiple, también es posible visualizar en él cintas grabadas en el sistema NTSC.

**TBC* <ON/OFF>**
- Seleccione ON para corregir vibraciones.
- Seleccione OFF si no es preciso corregir vibraciones. Es posible que la imagen sea inestable al realizar la reproducción.

**DNR* <ON/OFF>**
- Seleccione ON para reducir el ruido de imagen.
- Seleccione OFF si no es preciso reducir el ruido de imagen.

* Estos ajustes se mantienen aunque extraiga la batería, siempre que no retire la pila de litio.

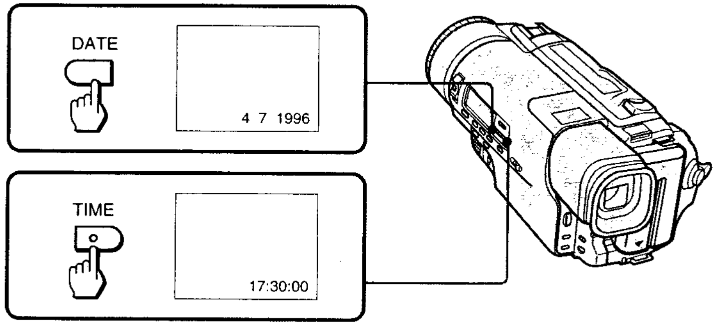
**Nota sobre el ajuste TBC**
Ajuste TBC en OFF cuando reproduzca:
- Una cinta copiada.
- Una cinta en la que haya grabado la señal de un juego de televisión o de un aparato similar.

## Recording with the date or time

Before you start recording or during recording, press DATE or TIME. You can record the date or time displayed in the viewfinder with the picture. You cannot record the date and time at the same time. Except for the date or time indicator, no indicator in the viewfinder is recorded.
The clock is already set at the factory; to London time for United Kingdom and to Paris time for the other European countries. You can reset the clock in the menu system.

## Grabación con la fecha o la hora

Antes de iniciar la grabación o durante ésta, pulse DATE o TIME. Es posible grabar la fecha o la hora que aparece en el visor electrónico junto con la imagen. No es posible grabar simultáneamente la fecha y la hora. Excepto el indicador de fecha u hora, no se grabará ningún indicador del visor electrónico.
Aunque el reloj está ajustado de fábrica a la hora de Londres para el Reino Unido y a la hora de París para el resto de países europeos, es posible reajustarlo en el sistema de menú.



### To stop recording with the date or time

Press DATE or TIME again. The date or time indicator disappears. The recording continues.

**Note on the date or time indicator**
If you press DATE or TIME while you are recording in CINEMA mode, the indicators in the viewfinder move upwards.

### Para detener la grabación con la fecha o la hora

Vuelva a pulsar DATE o TIME. El indicador de fecha u hora desaparecerá y la grabación continuará.

**Nota sobre el indicador de fecha u hora**
Si pulsa DATE o TIME durante la grabación en modo CINEMA, los indicadores del visor electrónico se desplazan hacia arriba.

## Fade-in and fade-out

You can fade in or out to give your recording a professional appearance.
When fading in, the picture gradually fades in from black or mosaic while the sound increases.
When fading out, the picture gradually fades to black or mosaic while the sound decreases.

### When fading in [a]

**(1)** While the camcorder is in Standby mode, press FADER/OVERLAP (only for CCD-TR3300E), or FADER (only for CCD-TR2200E). The fade indicator starts flashing.
**(2)** Press START/STOP to start recording. The fade indicator stops flashing.

### When fading out [b]

**(1)** During recording, press FADER/OVERLAP (only for CCD-TR3300E), or FADER (only for CCD-TR2200E). The fade indicator starts flashing.
**(2)** Press START/STOP to stop recording. The fade indicator stops flashing, and then recording stops.

## Aparición y desaparición gradual de imágenes

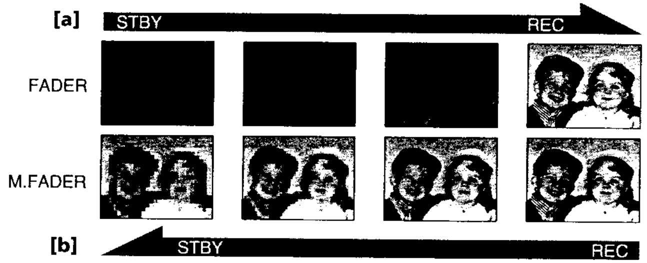
Emplee esta función para dar a las grabaciones un aspecto profesional.
Con la aparición gradual, la imagen aparece gradualmente desde el negro o mosaico mientras el sonido aumenta. Con la desaparición gradual, la imagen se funde gradualmente en negro o mosaico mientras el sonido disminuye.

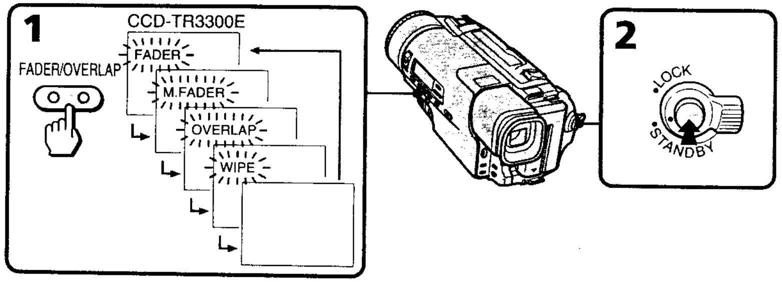
### Aparición gradual [a]

**(1)** Mientras la videocámara se encuentra en modo de espera, pulse FADER/OVERLAP (sólo CCD-TR3300E) o FADER (sólo CCD-TR2200E). El indicador de atenuación comenzará a parpadear.
**(2)** Pulse START/STOP para iniciar la grabación. El indicador de atenuación dejará de parpadear.

### Desaparición gradual [b]

**(1)** Durante la grabación, pulse FADER/OVERLAP (sólo CCD-TR3300E) o FADER (sólo CCD-TR2200E). El indicador de atenuación comenzará a parpadear.
**(2)** Pulse START/STOP para detener la grabación. El indicador de atenuación dejará de parpadear y, a continuación, la grabación se detendrá.





**Note on fade indicator –CCD-TR2200E only**
Each time you press FADER, the fade indicator changes: FADER → M.FADER → no indicator, cyclically.

### To cancel the fade-in/fade-out function

Before pressing START/STOP, press FADER/OVERLAP (only for CCD-TR3300E), or FADER (only for CCD-TR2200E) until the fade indicator disappears.

**When the date or time indicator is displayed**
The date or time indicator does not fade in or fade out.

**Note on fade-in/fade-out**
Fade-in/fade-out function is cancelled after executing this function.

**When the title is displayed**
You cannot use the FADER function. When FADER is set, you cannot superimpose a title.

**Nota sobre el indicador de atenuación - sólo CCD-TR2200E**
Cada vez que pulse FADER, el indicador de atenuación cambia cíclicamente de la siguiente forma: FADER → M.FADER → ningún indicador.

### Para cancelar la función de aparición y desaparición gradual de imágenes

Antes de pulsar START/STOP, pulse FADER/OVERLAP (sólo CCD-TR3300E) o FADER (sólo CCD-TR2200E) hasta que el indicador de atenuación desaparezca.

**Si se visualiza el indicador de fecha u hora**
Este indicador no aparece ni desaparece gradualmente.

**Nota sobre la función de aparición y desaparición gradual**
Esta función se cancelará una vez empleada.

**Cuando se visualice un titulo**
No podrá utilizar la función FADER. Cuando FADER esté activada, no podrá superponer un título.

## Overlapping two pictures (CCD-TR3300E only)

## Superposición de dos imágenes (sólo CCD-TR3300E)

When you switch from one scene to another, you can overlap the two pictures. With this function, the first scene turns to the second one gradually. You can hear the sound of the second scene gradually as you start recording the second scene.

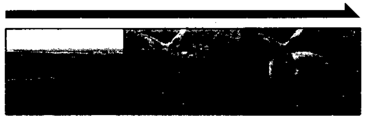
Al pasar de una escena a otra, es posible superponer las dos imágenes. Con esta función, la primera escena cambia gradualmente a la segunda. Es posible escuchar gradualmente el sonido de la segunda escena al iniciar la grabación de la misma.

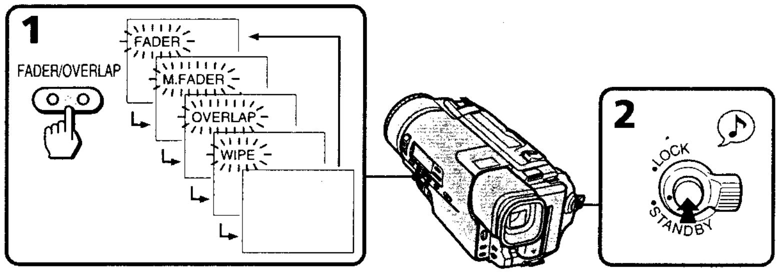
## Overlapping two pictures (CCD-TR3300E only)

## Superposición de dos imágenes (sólo CCD-TR3300E)

(1) While the camcorder is in Standby mode, press FADER/OVERLAP repeatedly so that the OVERLAP indicator appears in the viewfinder.
(2) Press START/STOP to record the next scene. The OVERLAP indicator disappears after the overlapping.

(1) Mientras la videocámara se encuentra en modo de espera, pulse FADER/OVERLAP varias veces de forma que el indicador OVERLAP aparezca en el visor electrónico.
(2) Pulse START/STOP para grabar la siguiente escena. El indicador OVERLAP desaparecerá después del proceso de superposición.





**Notes on overlap**
- You cannot use the following functions while using the overlap function. Also, while using the following functions, you cannot use the overlap function.
  - Digital effect
  - Slow shutter
  - Title
- You can select overlap during recording.
- When you select the overlap function after using the following operations, the camcorder memorizes the image on the tape. As the image is being memorized, the OVERLAP indicator flashes quickly, and the picture you are shooting disappears from the viewfinder. You may not record a clear picture depending on the condition of the tape.
  - Turn STANDBY down
  - Set the POWER switch to OFF
  - Eject a tape
  - Edit search
  - Fading out
  - Digital effect
  - Slow shutter
  - Title

**Notas sobre la superposición**
- No es posible emplear las funciones que se indican a continuación mientras se utiliza la función de superposición y viceversa:
  - Efecto digital
  - Obturación a baja velocidad
  - Titulación
- Es posible seleccionar la función de superposición durante la grabación.
- Si selecciona la función de superposición después de realizar las operaciones mencionadas a continuación, la videocámara memoriza la imagen de la cinta. Al memorizarse la imagen, el indicador OVERLAP parpadea rápidamente y la imagen que esté filmando desaparece del visor electrónico. Es posible que no pueda grabar imágenes nítidas dependiendo del estado de la cinta.
  - Girar STANDBY hacia abajo
  - Ajustar el interruptor POWER en OFF
  - Expulsar una cinta
  - Búsqueda de edición
  - Desaparición gradual
  - Efecto digital
  - Obturación a baja velocidad
  - Titulación

## Wiping away a still picture (CCD-TR3300E only)

When you switch from one scene to another, you can wipe away the still picture. With this function, the first still picture is wiped away from the centre to reveal the moving picture underneath.
You can hear the sound of the second scene as you start recording the second scene.

**(1)** While the camcorder is in Standby mode, press FADER/OVERLAP repeatedly so that the WIPE indicator appears in the viewfinder.

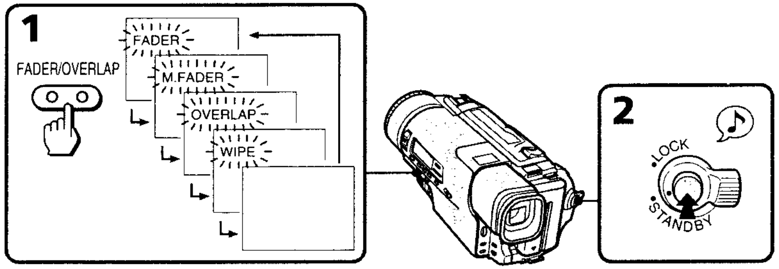
**(2)** Press START/STOP to record the next scene. The WIPE indicator disappears after wiping away.

## Desplazamiento en pantalla de imágenes fijas (sólo CCD-TR3300E)

Al pasar de una escena a otra, es posible desplazar la imagen fija. Con esta función, la primera imagen fija se desplaza a partir del centro para mostrar la imagen en movimiento que se encuentra debajo. Es posible escuchar el sonido de la segunda escena al iniciar la grabación de ésta.

**(1)** Mientras la videocámara se encuentra en modo de espera, pulse FADER/OVERLAP varias veces para que el indicador WIPE aparezca en el visor electrónico.

**(2)** Pulse START/STOP para grabar la siguiente escena. El indicador WIPE desaparecerá una vez realizado el proceso de desplazamiento.



## Wiping away a still picture (CCD-TR3300E only)

### Notes on wipe

- You cannot use the following functions while using the wipe function. Also, while using the following functions, you cannot use the wipe function.
  - Digital effect
  - Slow shutter
  - Title
- You can select wipe during recording.
- When you select the wipe function after using the following operations, the camcorder memorizes the image on the tape. As the image is being memorized, the WIPE indicator flashes quickly, and the picture you are shooting disappears from the viewfinder.You may not record a clear picture depending on the condition of the tape.
  - Turn STANDBY down
  - Set the POWER switch to OFF
  - Eject a tape
  - Edit search
  - Fading out
  - Digital effect
  - Slow shutter
  - Title

## Desplazamiento en pantalla de imágenes fijas (sólo CCD-TR3300E)

### Notas sobre el desplazamiento

- No es posible emplear las funciones que se indican a continuación mientras se emplea la función de desplazamiento y viceversa:
  - Efecto digital
  - Obturación a baja velocidad
  - Titulación
- Es posible seleccionar la función de desplazamiento durante la grabación.
- Si selecciona la función de desplazamiento después de realizar las operaciones mencionadas a continuación, la videocámara memoriza la imagen de la cinta. Al memorizarse la imagen, el indicador WIPE parpadea rápidamente y la imagen que esté filmando desaparece del visor electrónico. Es posible que no pueda grabar imágenes nítidas dependiendo del estado de la cinta.
  - Girar STANDBY hacia abajo
  - Ajustar el interruptor POWER en OFF
  - Expulsar una cinta
  - Búsqueda de edición
  - Desaparición gradual
  - Efecto digital
  - Obturación a baja velocidad
  - Titulación

# Enjoying picture effect

## Selecting picture effect

You can make pictures like those of television with the Picture Effect function.

[a]

[b]

[c]

[d]

[e]

[f]

**MOSAIC [a]**
The picture is mosaic.

**SOLARIZE [b]**
The light intensity is more clear, and the picture looks like an illustration.

**B&W**
The picture is monochrome (black and white).

**SEPIA**
The picture is sepia.

**NEG. ART [c]**
The picture is reversed.

**PASTEL [d]**
The contrast of the picture is emphasized, and the picture looks like an animated cartoon.

**SLIM [e]**
The picture expands vertically.

**STRETCH [f]**
The picture expands horizontally.

# Uso del efecto de imagen

## Selección del efecto de imagen

Con la función de efecto de imagen, es posible obtener imágenes como las de televisión.

**MOSAIC [a]**
La imagen aparece con efecto mosaico.

**SOLARIZE [b]**
La intensidad de iluminación es mayor y la imagen parece una ilustración.

**B&W**
La imagen es monocromo (blanco y negro).

**SEPIA**
La imagen aparece en sepia.

**NEG. ART [c]**
La imagen se invierte.

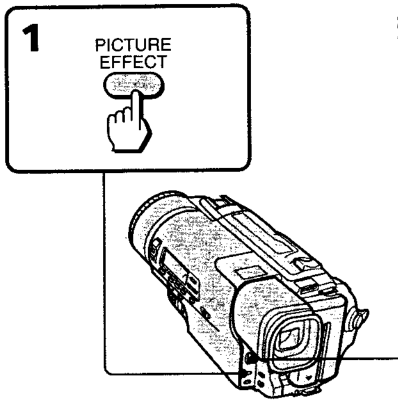
**PASTEL [d]**
El contraste de la imagen se enfatiza y dicha imagen parece un dibujo animado.

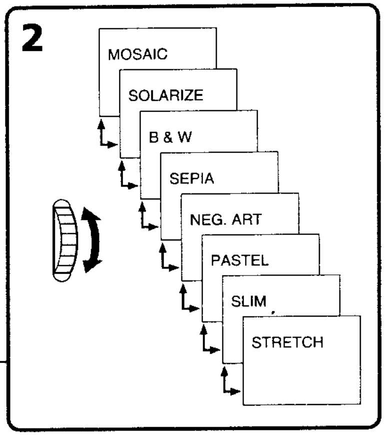
**SLIM [e]**
La imagen se expande verticalmente.

**STRETCH [f]**
La imagen se expande horizontalmente.

## Using picture effect function

**(1)** Press PICTURE EFFECT.
**(2)** Turn the control dial to select the desired picture effect mode.





### To turn off picture effect

Press PICTURE EFFECT to highlight the picture effect indicator, and press the button again. The indicator in the viewfinder goes out.

**Note on the picture effect**
When you turn the power off, the camcorder returns automatically to normal mode.

## Uso del efecto de imagen

**(1)** Pulse PICTURE EFFECT.
**(2)** Gire el dial de control para seleccionar el modo de efecto de imagen que desee.

### Para desactivar el efecto de imagen

Pulse PICTURE EFFECT para resaltar el indicador de efecto de imagen; a continuación, pulse el botón. El indicador del visor electrónico se apaga.

**Nota sobre el efecto de imagen**
Al desactivar la alimentación, la videocámara vuelve automáticamente al modo normal.

## Recording a still picture (CCD-TR3300E only)

## Grabación de imágenes fijas (sólo CCD-TR3300E)

You can record a still picture like those of still camera or shoot a moving picture with superimposing a still picture while the sound is recorded normally.

**(1)** Press DIGITAL EFFECT and turn the control dial to select the still indicator.

**(2)** Press the control dial to select still mode. The still indicator and still bars appear in the viewfinder, and still picture is stored in memory.

**(3)** Turn the control dial to adjust the rate of the still picture you want to superimpose on a moving picture. The rate of the still picture increases by the number of the still bars.

**(4)** Press START/STOP to start recording a moving picture with a still picture superimposed on. When you stop recording, press START/STOP again.

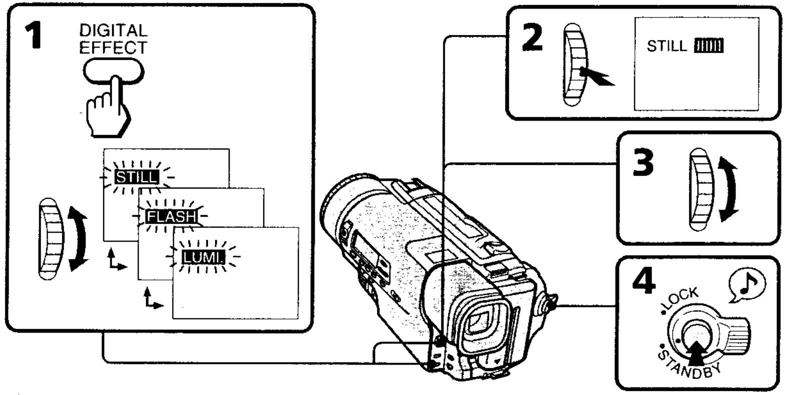
Es posible grabar imágenes fijas similares a las de cámara fija o filmar imágenes en movimiento con superposición de imágenes fijas mientras el sonido se graba con normalidad.

**(1)** Pulse DIGITAL EFFECT y gire el dial de control para seleccionar el indicador de imagen fija.

**(2)** Pulse el dial de control para seleccionar el modo de imagen fija. El indicador y barras de imagen fija aparecen en el visor electrónico mientras la imagen fija se almacena en la memoria.

**(3)** Gire el dial de control para ajustar la duración de la imagen fija que desee sobreponer sobre la imagen en movimiento. La duración de la imagen fija aumenta según el número de barras de imagen fija.

**(4)** Pulse START/STOP para iniciar la grabación de imágenes en movimiento con una imagen fija superpuesta. Si desea detener la grabación, vuelva a pulsar START/STOP.



### To cancel still mode

Press DIGITAL EFFECT to highlight the still indicator, and press the button again. The still indicator in the viewfinder disappears.

**Notes on still mode**

- You cannot use the following functions while recording a still picture.
  - Fade-in or fade-out
  - Mosaic fader
  - Overlap
  - Wipe
  - Slow shutter
- When you turn the power off, still mode will be cancelled automatically.

### Para cancelar el modo de imagen fija

Pulse DIGITAL EFFECT para resaltar el indicador de imagen fija; a continuación, pulse el botón. El indicador de imagen fija del visor electrónico desaparecerá.

**Notas sobre el modo de imagen fija**

- No es posible emplear las funciones que se relacionan a continuación mientras graba una imagen fija:
  - Aparición o desaparición gradual
  - Efecto mosaico
  - Superposición
  - Obturación a baja velocidad
  - Desplazamiento de imágenes
- Al desactivar la alimentación, el modo de imagen fija se cancelará automáticamente.

## Recording still pictures successively (CCD-TR3300E only)

## Grabación sucesiva de imágenes fijas (sólo CCD-TR3300E)

Using the Flash motion function, you can record still pictures successively at constant intervals. You can select intervals by adjusting the flash bars with the control dial. The sound is recorded normally during Flash motion.

**(1)** Press DIGITAL EFFECT and turn the control dial to select the flash motion indicator.

**(2)** Press the control dial to select flash mode. The flash motion indicator and flash motion bars appear in the viewfinder.

**(3)** Turn the control dial to adjust the interval of flash motion.

**(4)** Press START/STOP. Flash motion recording starts. To stop recording, press START/STOP again.

**[a]** normal recording
**[b]** flash motion recording

Mediante la función de movimiento por impulsos, es posible grabar imágenes fijas de forma sucesiva a intervalos constantes. Es posible seleccionar los intervalos ajustando las barras de movimiento por impulsos con el dial de control. El sonido se graba con normalidad durante el movimiento por impulsos.

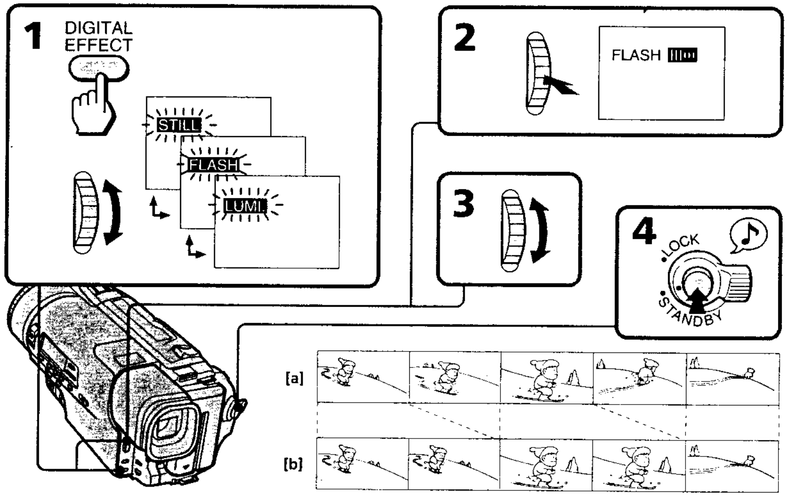
**(1)** Pulse DIGITAL EFFECT y gire el dial de control para seleccionar el indicador de movimiento por impulsos.

**(2)** Pulse el dial de control para seleccionar el modo de movimiento por impulsos. El indicador y barras de movimiento por impulsos aparecen en el visor electrónico.

**(3)** Gire el dial de control para ajustar el intervalo de movimiento por impulsos.

**(4)** Pulse START/STOP para iniciar la grabación con movimiento por impulsos. Para detener la grabación, vuelva a pulsar START/STOP.

**[a]** grabación normal
**[b]** grabación con movimiento por impulsos



### To cancel the flash motion

Press DIGITAL EFFECT to highlight the flash motion indicator, and press the button again. The flash motion indicator in the viewfinder disappears.

### Para cancelar el movimiento por impulsos

Pulse DIGITAL EFFECT para resaltar el indicador de movimiento por impulsos; a continuación, pulse el botón. El indicador de movimiento por impulsos desaparece del visor electrónico.

**Notes on the flash motion**

- The following functions does not work during the flash motion.
  - Fade-in or fade-out
  - Overlap
  - Mosaic fader
  - Wipe
  - Slow shutter
- When you turn the power off, flash motion mode will be cancelled automatically.

**Notas sobre el movimiento por impulsos**

- Las siguientes funciones no se activan durante el movimiento por impulsos:
  - Aparición y desaparición gradual
  - Superposición de imágenes
  - Efecto mosaico
  - Obturación a baja velocidad
  - Desplazamiento de imágenes
- Al desactivar la alimentación, el modo de movimiento por impulsos se cancelará automáticamente.

## Superimposing a moving picture on a still picture (CCD-TR3300E only)

Using the Luminancekey function, you can replace a brighter colour scheme portion of a still picture by a moving picture.
For example, you can superimpose the favorite scene on the background if you store the picture in memory as a still picture, such as a person in the bright background. The sound is recorded normally during Luminancekey function.

## Superposición de imágenes en movimiento sobre imágenes fijas (sólo CCD-TR3300E)

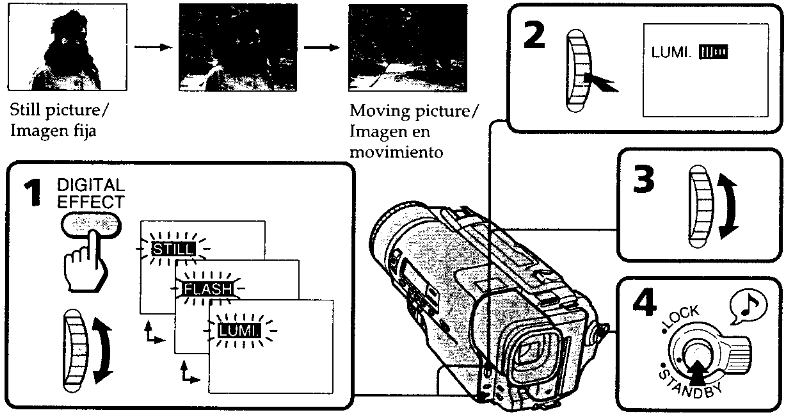
Mediante la función de luminancia, es posible reemplazar una parte de una imagen fija que presente colores con mayor brillo por una imagen en movimiento.
Por ejemplo, es posible superponer la escena que prefiera en el fondo si almacena la imagen en la memoria como imagen fija, por ejemplo una persona con fondo brillante. El sonido se graba con normalidad durante la función de luminancia.

## Superimposing a still picture on a moving picture (CCD-TR3300E only)

**(1)** Press DIGITAL EFFECT and turn the control dial to select the luminancekey indicator.
**(2)** Press the control dial to select luminancekey mode.
The luminancekey indicator and the luminancekey bars appear in the viewfinder, and still picture is stored in memory.
**(3)** Turn the control dial to adjust the colour scheme of the still picture.
The rate of the still picture increases by the number of the luminancekey bars.
**(4)** Press START/STOP. Luminancekey recording starts. To stop recording, press START/STOP again.

## Superposición de imágenes en movimiento sobre imágenes fijas (sólo CCD-TR3300E)

**(1)** Pulse DIGITAL EFFECT y gire el dial de control para seleccionar el indicador de luminancia.
**(2)** Pulse el dial de control para seleccionar el modo de luminancia.
El indicador y barras de luminancia aparecen en el visor electrónico y la imagen fija se almacena en la memoria.
**(3)** Gire el dial de control para ajustar el juego de colores de la imagen fija.
La duración de la imagen fija aumenta según el número de barras de luminancia.
**(4)** Pulse START/STOP para iniciar la grabación con movimiento por impulsos. Para detener la grabación, vuelva a pulsar START/STOP.



### To cancel the luminancekey

Press DIGITAL EFFECT to highlight the luminancekey indicator, and press the button again. The luminancekey indicator in the viewfinder disappears.

**Note on the luminancekey**

The following functions does not work during luminancekey.

- Fade-in or fade-out
- Mosaic fader
- Overlap
- Wipe
- Slow shutter

### Para cancelar la función de luminancia

Pulse DIGITAL EFFECT para resaltar el indicador de luminancia; a continuación, pulse el botón. El indicador de luminancia desaparece del visor electrónico.

**Nota sobre la función de luminancia**

Las siguientes funciones no se activan durante el modo de luminancia:

- Aparición o desaparición gradual
- Efecto mosaico
- Superposición
- Obturación a baja velocidad
- Desplazamiento de imágenes

## Re-recording a picture in the middle of a recorded tape

You can insert a scene in the middle of a recorded tape by setting the starting and ending points. The previous recorded portion will be erased. If the RC time code appears in the viewfinder, set COUNTER to NORMAL in the menu system to display the tape counter.

**(1)** While the camcorder is in Standby mode, keep pressing the + (forward playback) or – (reverse playback) side of EDITSEARCH, and release the button where you want to end the insertion **[b]**. The camcorder enters Standby mode again.

**(2)** Press COUNTER RESET. The counter resets to zero.

**(3)** Keep pressing the – side of EDITSEARCH and release the button at the point where you want to start the insertion **[a]**.

**(4)** Press ZERO MEM on the Remote Commander. The ZERO MEM indicator flashes.

**(5)** Press START/STOP to start recording. The recording stops automatically at the counter zero point.

## Inserción de imágenes en el medio de una cinta grabada

Es posible insertar escenas en el medio de una cinta grabada mediante la definición de los puntos de inicio y final. De esta forma, la parte previamente grabada se borrará. Si el código de tiempos RC aparece en el visor electrónico, ajuste COUNTER en NORMAL en el sistema de menú para visualizar el contador de cinta.

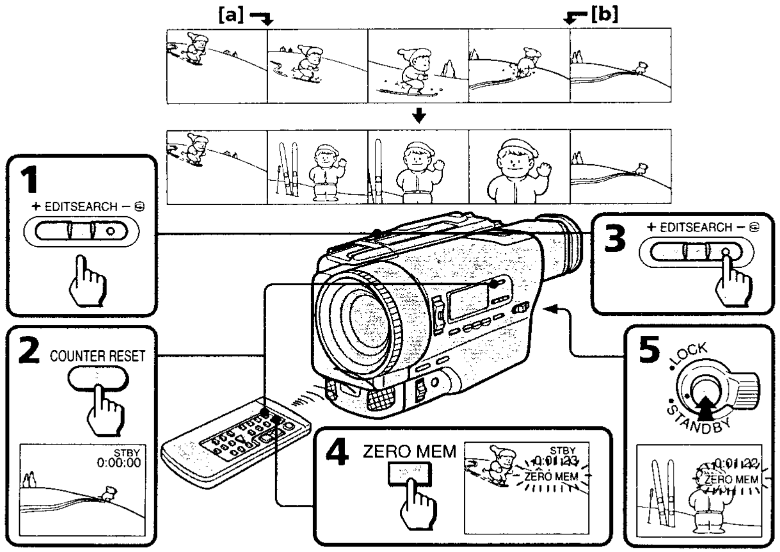
**(1)** Mientras la videocámara se encuentra en modo de espera, mantenga pulsado el lado + (reproducción progresiva) o – (reproducción regresiva) de EDITSEARCH, y suelte el botón donde desee finalizar la inserción **[b]**. La videocámara vuelve a introducir el modo de espera.

**(2)** Pulse COUNTER RESET para poner el contador a cero.

**(3)** Mantenga pulsado el lado – de EDITSEARCH y suelte el botón en el punto donde desee iniciar la inserción **[a]**.

**(4)** Pulse ZERO MEM en el mando a distancia. El indicador ZERO MEM parpadeará.

**(5)** Pulse START/STOP para iniciar la grabación. Ésta se detendrá automáticamente cuando el contador alcance el punto cero.



## Re-recording a picture in the middle of a recorded tape

### To change the end point

Press ZERO MEM to erase the ZERO MEM indicator, then repeat steps 2 to 5.

### Note on re-recording

The picture and the sound may be distorted at the end of the inserted portion when it is played back.

## Inserción de imágenes en el medio de una cinta grabada

### Para cambiar el punto final

Pulse ZERO MEM para que desaparezca el indicador ZERO MEM y, a continuación, repita los pasos 2 a 5.

### Nota sobre la inserción de imágenes

Es posible que la imagen y el sonido se distorsionen al final de la parte insertada al reproducirse.

# Using the wide mode function

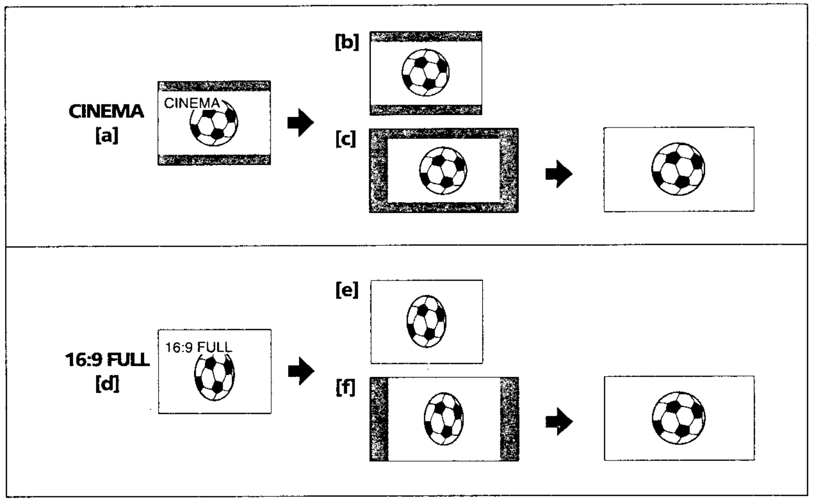
## Selecting the desired mode

You can record a cinemalike picture (CINEMA) or a 16:9 wide picture to watch on the 16:9 wide-screen TV (16:9 FULL).

# Uso de la función de modo panorámico

## Selección del modo deseado

Es posible grabar imágenes similares a las de cine (CINEMA) o imágenes panorámicas de 16:9 para visualizarlas en un televisor de pantalla panorámica de 16:9 (16:9 FULL).



### CINEMA

Black bands appear at the top and the bottom of the screen, and the viewfinder **[a]** and a normal TV screen **[b]** look wide. You can also watch the picture without black bands on a wide-screen TV **[c]**.

### 16:9 FULL

The picture in the viewfinder **[d]** or on a normal TV **[e]** is horizontally compressed. You can watch the picture of normal images on a wide-screen TV **[f]**.

### CINEMA

Aparecen bandas negras en las partes superior e inferior de la pantalla, mientras el visor electrónico **[a]** y la pantalla normal del televisor **[b]** aparecen con forma panorámica. También es posible visualizar la imagen sin bandas negras en un televisor de pantalla panorámica **[c]**.

### 16:9 FULL

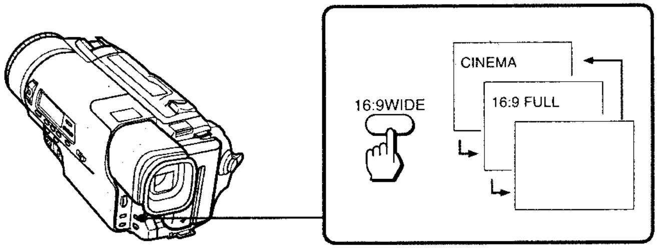
La imagen del visor electrónico **[d]** o de un televisor normal **[e]** se comprime horizontalmente. Es posible visualizar imágenes normales en un televisor de pantalla panorámica **[f]**.

## Using the wide mode function

While the camcorder is in Standby mode, press 16:9WIDE repeatedly so that the desired mode indicator appears in the viewfinder.

## Uso de la función de modo panorámico

Mientras la videocámara se encuentra en modo de espera, pulse 16:9WIDE varias veces para que el visor electrónico muestre el indicador del modo que desee.



### To cancel wide mode

Press 16:9WIDE repeatedly until the wide mode indicator disappears.

### To watch the tape recorded in wide mode

To watch the tape recorded in CINEMA mode, set the screen mode of the wide-screen TV to zoom mode. To watch the tape recorded in 16:9 FULL mode, set it to full mode. For details, refer to the instruction manual of your TV.
Note that the picture recorded in 16:9 FULL mode looks compressed on a normal TV.

#### Notes on wide mode

- When you record in 16:9 FULL mode, the date or time indicator will be widened on the wide-screen TV.
- If you dub a tape, the tape is copied in the same mode as the original recording.
- The wide mode is cancelled automatically 5 minutes after you remove the power source.

### Para cancelar el modo panorámico

Pulse 16:9WIDE varias veces hasta que desaparezca el indicador de modo panorámico.

### Para visualizar la cinta grabada en modo panorámico

Para visualizar la cinta grabada en modo CINEMA, ajuste el modo de pantalla del televisor de pantalla panorámica en modo de zoom. Para visualizar la cinta grabada en modo 16:9 FULL, realice el ajuste en modo total (FULL). Para obtener más información, consulte el manual de instrucciones del televisor. Observe que la imagen grabada en modo 16:9 FULL aparece comprimida en un televisor normal.

#### Notas sobre el modo panorámico

- Si graba en modo 16:9 FULL, el indicador de fecha u hora aparecerá ampliado en el televisor de pantalla panorámica.
- Si copia una cinta, ésta se copiará en el mismo modo de la grabación original.
- El modo panorámico se cancelará automáticamente 5 minutos después de retirar la fuente de alimentación.

# Selecting the START/ STOP mode

# Selección del modo de inicio/parada START/STOP

Your camcorder has two modes besides normal start/stop mode. These modes enable you to take a series of quick shots resulting in a lively video.

**(1)** Set the START/STOP MODE switch to the desired mode.
  - ⊻ : Recording starts when you press START/ STOP, and stops when you press it again (normal mode).
  - ⊥ : The camcorder records only while you press down START/STOP.
  - 5 SEC: When you press START/STOP, the camcorder records for 5 seconds and then stops automatically.

**(2)** Turn STANDBY up and press START/STOP. Recording starts.

If you selected 5 SEC, five dots appear in the viewfinder. The dots disappear at a rate of one per second. When 5 seconds elapse and all the dots disappear, the camcorder switches to Standby mode automatically.

If you select ⊥, the camcorder records as long as you hold down START/STOP.

La videocámara dispone de dos modos además del normal de inicio y detención. Estos modos permiten realizar la filmación en varias tomas rápidas para obtener un vídeo con ritmo.

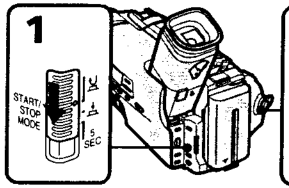
**(1)** Ajuste el interruptor START/STOP MODE en el modo que desee.
  - ⊻ :La grabación se inicia al pulsar START/ STOP, y se detiene si vuelve a pulsarlo (modo normal).
  - ⊥ :La videocámara graba sólo mientras pulsa START/STOP.
  - 5 SEC: Si pulsa START/STOP, la videocámara graba durante 5 segundos y, a continuación, se detiene automáticamente.

**(2)** Gire STANDBY hacia arriba y pulse START/ STOP. La grabación se iniciará.

Si ha seleccionado 5 SEC, aparecerán cinco puntos en el visor electrónico, que desaparecerán a un ritmo de uno por segundo. Si transcurren 5 segundos y desaparecen todos los puntos, la videocámara introducirá automáticamente el modo de espera.

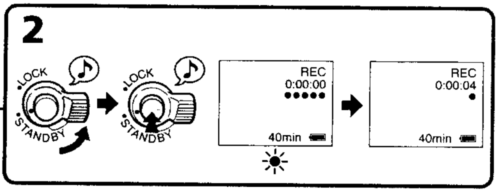
Si selecciona ⊥, la videocámara grabará mientras mantenga pulsado START/STOP.

1



START/ STOP MODE
5 SEC

2



LOCK
STANDBY
LOCK
STANDBY
REC
0:00:00
●●●●●
40min
REC
0:00:04
●
40min

### To extend the recording time in 5 SEC mode

Press START/STOP again before all the dots disappear. Recording continues for about 5 seconds from the moment you pressed START/ STOP.

### To return to normal recording

Set the START/STOP MODE switch to ⊻. If you set the switch while recording, recording continues.

**Note on 5 SEC recording and ⊥ mode**

You cannot use FADER/OVERLAP (only for CCD-TR3300E) or FADER (only for CCD-TR2200E) if you select 5 SEC or ⊥.

### Para aumentar el tiempo de grabación en modo 5 SEC

Vuelva a pulsar START/STOP antes de que desaparezcan todos los puntos. La grabación continuará durante 5 segundos aproximadamente a partir del momento en que pulsó START/STOP.

### Para volver a la grabación normal

Ajuste el interruptor START/STOP MODE en ⊻. Si ajusta el interruptor durante la grabación, ésta continuará realizándose.

**Nota sobre la grabación 5 SEC y el modo ⊥**

Si selecciona 5 SEC o ⊥, no es posible emplear FADER/OVERLAP (sólo CCD-TR3300E) o FADER (sólo CCD-TR2200E).

# Superimposing a title

# Superposición de títulos

You can select one of eight preset titles. You can also select the language, position, and colour of titles in the menu system.

## Selecting the language

**(1)** While the camcorder is in Standby mode, press MENU to display the menu.

**(2)** Turn the control dial to select TITLE LANG, then press the dial.

**(3)** Turn the control dial to select the desired language, then press the dial.

**(4)** Press MENU to erase the menu display.

Es posible realizar la selección entre ocho títulos predefinidos. También es posible seleccionar el idioma, la posición y el color de los títulos en el sistema de menú.

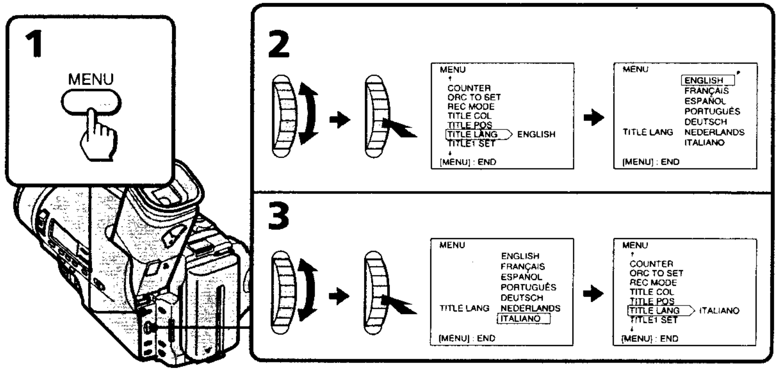
## Selección del idioma

**(1)** Mientras la videocámara se encuentra en modo de espera, pulse MENU para que aparezca el menú.

**(2)** Gire el dial de control para seleccionar TITLE LANG y, a continuación, pulse el dial.

**(3)** Gire el dial de control para seleccionar el idioma que desee y, a continuación, pulse el dial.

**(4)** Pulse MENU para que el menú desaparezca.



1
MENU
2
MENU
COUNTER
ORC TO SET
REC MODE
TITLE COL
TITLE POS
TITLE LANG
ENGLISH
TITLE1 SET
[MENU] : END
MENU
ENGLISH
FRANÇAIS
ESPAÑOL
PORTUGUÊS
DEUTSCH
TITLE LANG
NEDERLANDS
ITALIANO
[MENU] : END
3
MENU
ENGLISH
FRANÇAIS
ESPAÑOL
PORTUGUÊS
DEUTSCH
TITLE LANG
NEDERLANDS
ITALIANO
[MENU] : END
MENU
COUNTER
ORC TO SET
REC MODE
TITLE COL
TITLE POS
TITLE LANG
ITALIANO
TITLE1 SET
[MENU] : END

## Using titles

### To add the title from the beginning

**(1)** While the camcorder is in Standby mode, press TITLE repeatedly until the desired title appears.
Each time a new title appears, it flashes. When the desired title appears, wait for it to stop flashing.
Titles cycle as follows.
Original title 1 → Original title 2 → HELLO! → HAPPY BIRTHDAY → HAPPY HOLIDAYS → CONGRATURATIONS! → OUR SWEET BABY → WEDDING → VACATION → THE END
After "THE END" the title indicator goes off once and returns to Original title 1 again.
The titles are displayed in the language you selected in the menu system.

**(2)** Press START/STOP to start recording.

**(3)** When you want to stop recording the title, press TITLE again.

**Note on titles**
The contents and the order of titles are different depending on the laguages.

**If you have not stored any original titles**
The titles begin from "HELLO!".

## Uso de los títulos

### Para introducir el título desde el principio

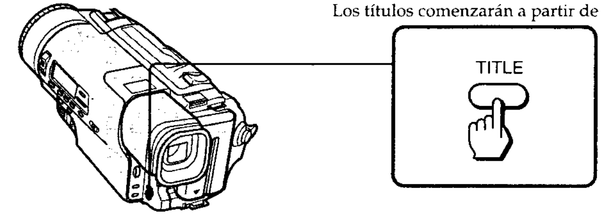
**(1)** Mientras la videocámara se encuentra en modo de espera, pulse TITLE varias veces hasta que aparezca el título que desee.
Cada vez que aparezca un nuevo título, éste parpadeará.
Cuando aparezca el título que desee, espere hasta que deje de parpadear.
Los títulos aparecen cíclicamente de la siguiente forma:
Título original 1 → Título original 2 → HELLO! → HAPPY BIRTHDAY → HAPPY HOLIDAYS → CONGRATURATIONS! → OUR SWEET BABY → WEDDING → VACATION → THE END
Después de que el indicador del título "THE END" desaparezca, volverá a aparecer el título original 1.
Los títulos aparecerán en el idioma seleccionado en el sistema de menú.

**(2)** Pulse START/STOP para iniciar la grabación.

**(3)** Si desea detener la grabación del título, vuelva a pulsar TITLE.

**Nota sobre los títulos**
El contenido y el orden de los títulos difieren en función de los idiomas.

**Si no ha almacenado ningún título original**
Los títulos comenzarán a partir de "HELLO!".



### To add the title while you are recording

**(1)** While in Standby mode, press TITLE repeatedly until the desired title appears to cycle through the titles.
Each time a new title appears, it flashes.

**(2)** When the desired title appears, wait for it to stop flashing, and press TITLE again to erase the title from the display.

**(3)** Start recording.

**(4)** When you reach the point where you want to add the title, press TITLE.

**(5)** When you want to stop recording the title, press TITLE again.

### Para introducir el título durante la grabación

**(1)** Durante el modo de espera, pulse TITLE varias veces hasta que aparezca el título que desee.
Cada vez que aparezca un nuevo título, éste parpadeará.

**(2)** Cuando aparezca el título que desee, espere hasta que deje de parpadear; a continuación, vuelva a pulsar TITLE para que el título desaparezca.

**(3)** Inicie la grabación.

**(4)** Cuando llegue al punto donde desee introducir el título, pulse TITLE.

**(5)** Si desea detener la grabación del título, vuelva a pulsar TITLE.

## Superimposing a title

### To select the colour of the title

**(1)** While in Standby mode, press MENU to display the menu.

**(2)** Turn the control dial to select TITLE COL and press the control dial to select it.
The colour menu appears.

**(3)** Turn the control dial to highlight a colour, and press the control dial to select it.

**(4)** Press MENU to erase the menu display.

## Superposición de títulos

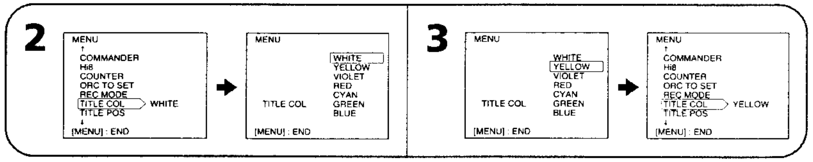
### Para seleccionar el color del título

**(1)** Durante el modo de espera, pulse MENU para que aparezca el menú.

**(2)** Gire el dial de control para seleccionar TITLE COL y púlselo para seleccionarlo.
Aparece el menú de colores.

**(3)** Gire el dial de control para resaltar un color y, a continuación, púlselo para seleccionarlo.

**(4)** Pulse MENU para que el menú desaparezca.


2
MENU
COMMANDER
Hi8
COUNTER
ORC TO SET
REC MODE
TITLE COL
WHITE
TITLE POS
[MENU] : END
MENU
TITLE COL
WHITE
YELLOW
VIOLET
RED
CYAN
GREEN
BLUE
[MENU] : END
3
MENU
TITLE COL
WHITE
YELLOW
VIOLET
RED
CYAN
GREEN
BLUE
[MENU] : END
MENU
COMMANDER
Hi8
COUNTER
ORC TO SET
REC MODE
TITLE COL
YELLOW
TITLE POS
[MENU] : END

### To select the position of the title

**(1)** While in Standby mode, press MENU to display the menu in the viewfinder.

**(2)** Turn the control dial to select TITLE POS and press the control dial to select it.
The position menu appears.

**(3)** Turn the control dial to highlight CENTER or BOTTOM, and press the control dial to select it.

**(4)** Press MENU to erase the menu display.

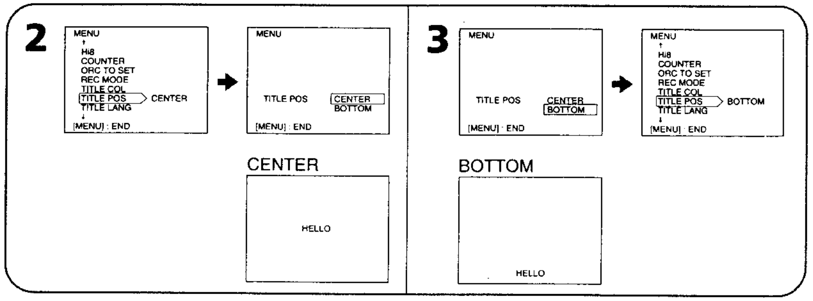
### Para seleccionar la posición del título

**(1)** Durante el modo de espera, pulse MENU para que el visor electrónico muestre el menú.

**(2)** Gire el dial de control para seleccionar TITLE POS y púlselo para seleccionarlo.
Aparece el menú de posiciones.

**(3)** Gire el dial de control para resaltar CENTER o BOTTOM y, a continuación, púlselo para seleccionarlo.

**(4)** Pulse MENU para que desaparezca el menú.


2
MENU
Hi8
COUNTER
ORC TO SET
REC MODE
TITLE COL
TITLE POS
CENTER
TITLE LANG
[MENU] : END
MENU
TITLE POS
CENTER
BOTTOM
[MENU] : END
CENTER
HELLO
3
MENU
TITLE POS
CENTER
BOTTOM
[MENU] : END
MENU
Hi8
COUNTER
ORC TO SET
REC MODE
TITLE COL
TITLE POS
BOTTOM
TITLE LANG
[MENU] : END
BOTTOM
HELLO

**Notes on selecting a title**
- You cannot select a title while you are recording.
- You cannot select fade-in/fade-out while you are adding a title.
- You cannot record a title while you are recording with the date or time.

**Notas sobre la selección de títulos**
- No es posible seleccionar títulos durante la grabación.
- No es posible seleccionar la función de aparición y desaparición gradual mientras introduce un título.
- No es posible registrar títulos mientras graba con la fecha o la hora.

# Making your own original titles

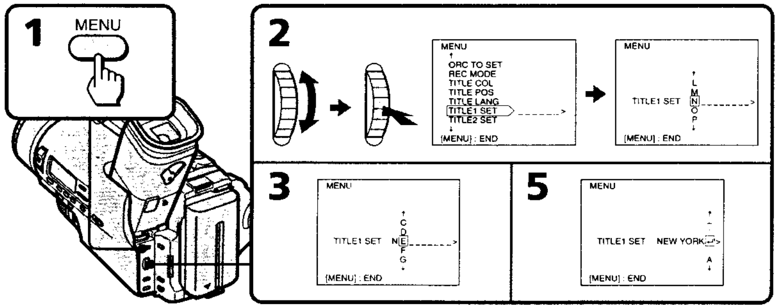
# Creación de títulos

You can make up to two titles and store them in the camcorder.
Eject the cassette before you begin. Your title can have up to 22 letters.

**(1)** While in Standby mode, press MENU to display the menu.
**(2)** Turn the control dial to select TITLE 1 SET or TITLE 2 SET, then press the dial.
**(3)** Turn the control dial to highlight a letter, and press the control dial to select it.
**(4)** Repeat step 3 until you finish the title.
**(5)** When you are finished, turn the control dial to highlight ↵ and press the control dial to select it.
The title is stored.
**(6)** Press MENU to erase the menu display.

Es posible crear un máximo de dos títulos y almacenarlos en la videocámara. Expulse el videocassette antes de comenzar. El título puede componerse de un máximo de 22 letras.

**(1)** Durante el modo de espera, pulse MENU para que aparezca el menú.
**(2)** Gire el dial de control para seleccionar TITLE 1 SET o TITLE 2 SET y, a continuación, púlselo.
**(3)** Gire el dial de control para resaltar una letra y, a continuación, púlselo para seleccionarla.
**(4)** Repita el paso 3 hasta completar el título.
**(5)** Una vez finalizado el proceso, gire el dial de control para resaltar ↵ y púlselo para seleccionarlo.
El título queda almacenado.
**(6)** Pulse MENU para que el menú desaparezca.



## To edit a title you have stored

In step 2, select TITLE 1 SET or TITLE 2 SET, whichever title you want to edit is stored in. Then change the title.

### Instead of selecting ↵ in step 5 to store the title

You can do one of the following:
- Enter 22 letters.
- Press MENU.

### If you do nothing more than 5 minutes

The power goes off automatically. Turn STANDBY down once, turn it again up and proceed from step 3.

## Para editar títulos almacenados

En el paso 2, seleccione TITLE 1 SET o TITLE 2 SET en función de donde se encuentre almacenado el título que desee editar. A continuación, cámbielo.

### En lugar de seleccionar ↵ en el paso 5 para almacenar el título

Es posible realizar una de las siguientes operaciones:
- Introducir 22 letras.
- Pulsar MENU.

### Si no realiza ninguna operación en un período superior a 5 minutos

La alimentación se desactivará automáticamente. Gire STANDBY hacia abajo una vez, vuelva a girarlo hacia arriba y comience el procedimiento a partir del paso 3.

### To delete a title

At the leftmost character position, select ↵ and press TITLE. Do not erase the title by selecting empty spaces. If you do so, a title full of empty spaces is stored.

### Para eliminar títulos

Seleccione ↵ y pulse TITLE en la posición de caracteres del extremo izquierdo. No borre el título mediante la selección de espacios vacíos, ya que si lo hace se almacenará un título lleno de espacios vacíos.

# Releasing the STEADY SHOT function

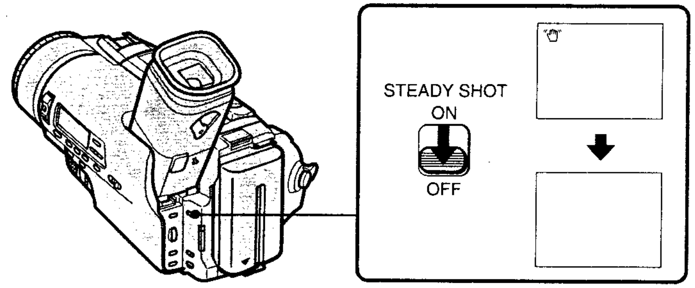
# Desactivación de la función STEADY SHOT

When you shoot, the ✋ indicator appears in the viewfinder. This indicates that the Steady Shot function is working and the camcorder compensates for camera-shake.

Set STEADY SHOT to OFF.

Durante la filmación, el indicador ✋ aparece en el visor electrónico para indicar que la función de estabilización de imagen (Steady Shot) se encuentra activada, por la que la videocámara compensa las sacudidas de la cámara.

Ajuste STEADY SHOT en OFF.



## To activate the Steady Shot function again

Set STEADY SHOT to ON.

### Note on the Steady Shot function

The Steady Shot function will not correct excessive camera-shake.

## Para volver a activar la función Steady Shot

Ajuste STEADY SHOT en ON.

### Nota sobre la función Steady Shot

Esta función no corregirá sacudidas excesivas de la cámara.

## Checking the tape condition before recording (ORC)

Use this feature to check the tape condition before recording, so that you can get the best possible picture.

**(1)** While in Standby mode, press MENU to display the menu.

**(2)** Turn the control dial to highlight ORC TO SET and press the control dial to select it. "START/STOP KEY" appears.

**(3)** Press START/STOP.
The camcorder takes about 5 seconds to check the condition of the tape head and the cassette.

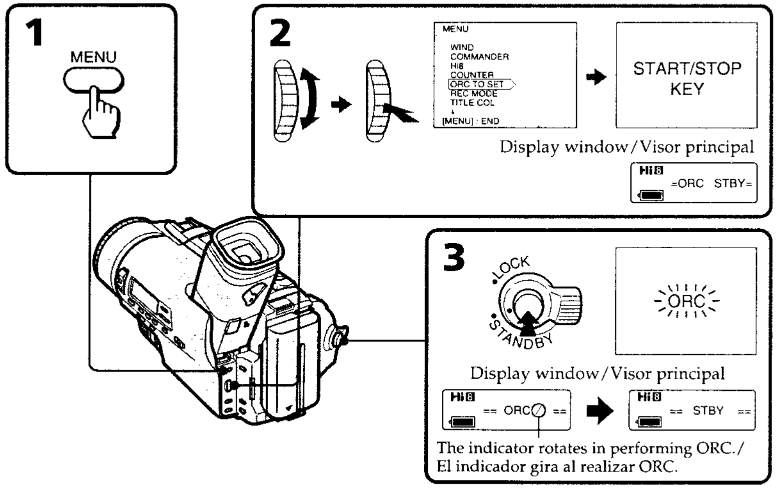
## Comprobación del estado de la cinta antes de la grabación (ORC)

Emplee esta función para comprobar el estado de la cinta antes de la grabación con el fin de obtener la mejor calidad de imagen posible.

**(1)** Durante el modo de espera, pulse MENU para que aparezca el menú.

**(2)** Gire el dial de control para resaltar ORC TO SET y, a continuación, púlselo para seleccionarlo. Aparece "START/STOP KEY".

**(3)** Pulse START/STOP.
La videocámara tardará unos 5 segundos en comprobar el estado del cabezal de cinta y del videocassette.



Display window/Visor principal

Display window/Visor principal

The indicator rotates in performing ORC./
El indicador gira al realizar ORC.

**Each time you insert the cassette**
Perform the above procedures.

**To see if you have performed ORC**
Perform steps 1 and 2 above. If "ORC ON" is displayed, the tape condition has been checked.

**When the tab on the cassette exposes the red mark**
You can not use ORC.

**When you check the tape condition**
A 0.1-second unrecorded space is made on the tape. However, if you start recording immediately, the unrecorded portion disappears.

**Cada vez que inserte el videocassette**
Realice los procedimientos descritos anteriormente.

**Para comprobar si ha realizado la función ORC**
Efectúe los pasos 1 y 2 anteriores. Si aparece la indicación "ORC ON" significa que se ha comprobado el estado de la cinta.

**Si la lengüeta del videocassette muestra la marca roja**
No será posible emplear la función ORC.

**Al comprobar el estado de la cinta**
Se registrará en la cinta un espacio sin grabación de 0,1 segundos. No obstante, si inicia inmediatamente la grabación, la parte sin grabación desaparecerá.

**English**

## Selecting automatic/manual adjustment modes

The camcorder's automatic functions offer you worry-free operation under most shooting conditions. But in some circumstances, manual adjustment is better for creative recording.
You can adjust focus, aperture, shutter speed, gain, and white balance automatically or manually. Also, you can use the PROGRAM AE function in particular circumstances, and adjust the brightness of the picture with the AE shift function.
Here's the overview of each manual adjustment. See the following pages for detailed information.

### To focus manually

Set FOCUS to MANUAL. You can adjust the focus regardless of the position of the AUTO LOCK/HOLD switch. When you want to focus automatically, set FOCUS to AUTO.

### To manually adjust aperture, shutter speed, gain, and white balance

Set AUTO LOCK/HOLD to the centre position. You can adjust each item independently. When you want to adjust each item automatically, set AUTO LOCK/HOLD to AUTO LOCK.

### To manually adjust the brightness

Use AE SHIFT in the menu system.

**Note on the previous settings**
Once you adjust the settings manually, they are stored in memory in the following cases as long as the lithium battery is in place.
- when you return to automatic adjustment mode.
- when you set the POWER switch to OFF.
- in five minutes after you remove the power source as long as the lithium battery is installed in the camcorder.

| | | **PROGRAM AE** | | | |
|---|---|---|---|---|---|
| | **Automatic adjustment** | **Aperture priority mode** | **Shutter priority mode** | **Twilight mode** | **Manual adjustment** |
| **Aperture** | Automatic | Manual | Automatically adjusted according to the shutter speed | Automatic | Automatic or manual |
| **Shutter speed** | 1/50 | Automatically adjusted according to the aperture | Manual | 1/50 | 1/50 or manual |
| **Gain** | Automatic | Automatic | Automatic | Automatic | Automatic or manual |
| **White balance** | Automatic | Changes each time you turn the control dial after pressing WHT BAL<br>Automatic (no indication) or ▣ (one push white balance) ←→ ☀ (outdoor) ←→ ☼ (indoor) | | | |
| **AE shift*** | Effective | Effective | Effective | Effective | Effective |
| **Focus** | Automatic or manual according to the position of the FOCUS switch | | | | |

* You cannot change AE shift while adjusting the aperture manually.

**Español**

# Selección del modo de ajuste manual o automático

Con las funciones automáticas de la videocámara no es necesario preocuparse por las operaciones en la mayoría de las condiciones de filmación. No obstante, en algunas circunstancias resulta más útil emplear el ajuste manual para realizar grabaciones creativas.
Es posible ajustar de forma manual o automática el enfoque, la apertura, la velocidad de obturación, la ganancia y el balance de blancos. Asimismo, puede emplear la función PROGRAM AE en determinadas circunstancias y ajustar el brillo de la imagen con la función de desplazamiento AE.
A continuación, se proporciona una descripción general de cada ajuste manual. Para obtener información detallada, consulte las páginas siguientes.

### Para realizar el enfoque manualmente

Ajuste FOCUS en MANUAL. Es posible ajustar el enfoque independientemente de la posición del interruptor AUTO LOCK/HOLD. Si desea realizar el enfoque automáticamente, ajuste FOCUS en AUTO.

### Para ajustar manualmente la apertura, la velocidad de obturación, la ganancia y el balance de blancos

Ajuste AUTO LOCK/HOLD en la posición central. Es posible ajustar cada elemento por separado. Si desea ajustar automáticamente cada elemento, ajuste AUTO LOCK/HOLD en AUTO LOCK.

### Para ajustar el brillo manualmente

Emplee la función AE SHIFT en el sistema de menú.

**Nota sobre los ajustes anteriores**

Una vez realizados los ajustes manualmente, éstos quedan almacenados en la memoria en los siguientes casos siempre que no retire la pila de litio:

- si vuelve al modo de ajuste automático.
- si ajusta el interruptor POWER en OFF.
- cinco minutos después de retirar la fuente de alimentación siempre que la pila de litio esté instalada en la videocámara.

| | **Ajuste automático** | **PROGRAM AE** | | | **Ajuste manual** |
|---|---|---|---|---|---|
| | | **Modo de prioridad de apertura** | **Modo de prioridad de obturación** | **Modo crepuscular** | |
| **Apertura** | Automático | Manual | Ajustado automáticamente en función de la velocidad de obturación | Automático | Automático o manual |
| **Velocidad de obturación** | 1/50 | Ajustado automáticamente en función de la apertura | Manual | 1/50 | 1/50 o manual |
| **Ganancia** | Automático | Automático | Automático | Automático | Automático o manual |
| **Balance de blancos** | Automático | Cambia cada vez que gire el dial de control después de pulsar WHT BAL Automático (sin indicación) o ⛰ (balance de blancos con un solo movimiento) ←→ ☀ (exteriores) ←→ 💡 (interiores) | | | |
| **Desplazamiento AE*** | Efectivo | Efectivo | Efectivo | Efectivo | Efectivo |
| **Enfoque** | Automático o manual en función de la posición del interruptor FOCUS | | | | |

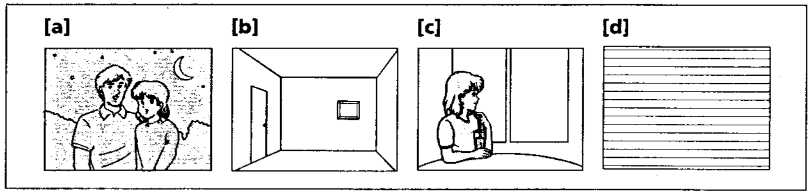
* No es posible modificar el desplazamiento AE durante el ajuste manual de la apertura.

# Focusing manually

# Enfoque manual

## When to use manual focus

In the following cases you should obtain better results by adjusting the focus manually.



- Insufficient light **[a]**
- Subjects with little contrast – walls, sky, etc. **[b]**
- Too much brightness behind the subject **[c]**
- Horizontal stripes **[d]**
- Subjects through frosted glass
- Subjects beyond nets, etc.
- Bright subject or subject reflecting the light
- Shooting a stationary subject when using a tripod

## Cuándo emplear el enfoque manual

En los siguientes casos se obtienen mejores resultados mediante el ajuste manual del enfoque.

- Iluminación insuficiente **[a]**
- Objetos con poco contraste – paredes, el cielo, etc. **[b]**
- Demasiado brillo detrás del objeto **[c]**
- Rayas horizontales **[d]**
- Objetos situados detrás de vidrios con escarcha
- Objetos situados detrás de redes, etc.
- Objetos brillantes o que reflejan luz
- Filmación de objetos sin movimiento con un trípode

## Focusing manually

When focusing manually, first focus in telephoto before recording, and then reset the shot length.

**(1)** Set FOCUS to MANUAL. The Ⓕ indicator appears in the viewfinder.

**(2)** Move the power zoom lever to the "T" side until the lever reaches the end.

**(3)** Turn the focus ring to achieve a sharp focus. Be sure to not touch the built-in microphone when you turn the focus ring.

**(4)** Set the desired shot length using the power zoom lever.

## Enfoque manual

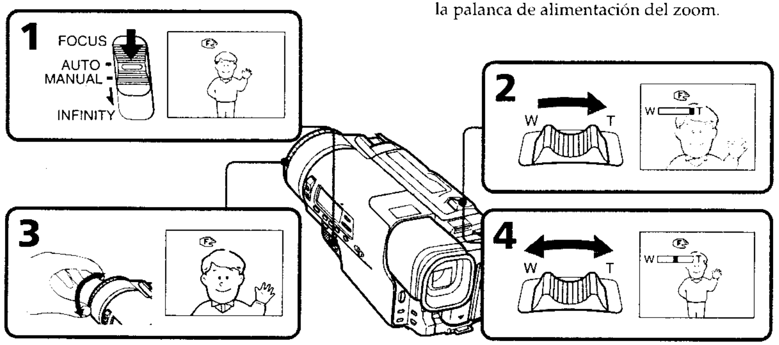
Al enfocar manualmente, enfoque en primer lugar en la posición de telefoto antes de la grabación y, a continuación, ajuste la distancia de filmación.

**(1)** Ajuste FOCUS en MANUAL. El indicador Ⓕ aparece en el visor electrónico.

**(2)** Desplace la palanca de alimentación del zoom hacia el lado "T" hasta que dicha palanca llegue al final.

**(3)** Gire el anillo de enfoque para obtener un enfoque nítido. Asegúrese de no tocar el micrófono incorporado al girar el anillo.

**(4)** Ajuste la distancia de filmación que desee con la palanca de alimentación del zoom.



### To return to autofocus mode

Set FOCUS to AUTO. The Ⓕ indicator in the viewfinder disappears.

**Shooting in relatively dark places**

Shoot at wide-angle after focusing in the telephoto position.

**Note on the focus ring**

The focus ring does not have a stop position.

### To shoot with autofocus momentarily

When you want to switch to autofocus momentarily while recording in manual focus mode, press PUSH AUTO down. Autofocus functions while PUSH AUTO is held down. when it is released, manual focus mode will be resumed.

### Para volver al modo de enfoque automático

Ajuste FOCUS en AUTO. El indicador Ⓕ desaparece del visor electrónico.

**Filmación en lugares relativamente oscuros**

Realice la filmación en gran angular después de enfocar en la posición de telefoto.

**Nota sobre el anillo de enfoque**

Este anillo no dispone de posición de parada.

### Para filmar momentáneamente con el enfoque automático

Si desea cambiar momentáneamente al enfoque automático durante la grabación en el modo de enfoque manual, pulse PUSH AUTO. El modo de enfoque automático permanece activado mientras mantiene pulsado PUSH AUTO. Si suelta este botón, se reanudará el modo de enfoque manual.

### To record a very distant subject

Push FOCUS down to INFINITY. The lens focuses on the most distant subject while FOCUS is held down.
When it is released, manual focus mode is resumed. Use this function when shooting through a window or a screen, to focus on a more distant subject.

**Note on manual focusing**

The Ⓕ indicator will change to the followings:
▲:When recording an infinitely distant subject.
♟: When there is something too close to focus on.

### Para grabar objetos muy distantes

Pulse FOCUS hasta alcanzar la posición INFINITY. El objetivo enfoca los objetos más distantes mientras mantiene pulsado FOCUS.
Al soltarlo, se reanuda el modo de enfoque manual. Emplee esta función al filmar a través de una ventana o una pantalla con el fin de enfocar objetos más distantes.

**Nota sobre el enfoque manual**

El indicador Ⓕ cambiará en los siguientes casos:
▲:Al grabar objetos infinitamente distantes.
♟: Si existe algún objeto demasiado cerca enfocado.

# Using the PROGRAM AE function

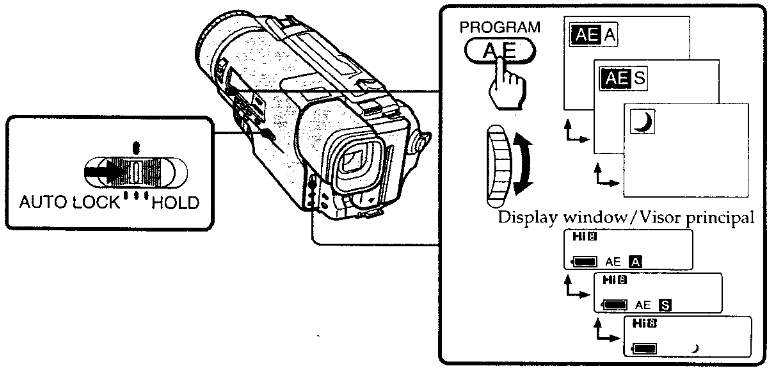
# Uso de la función PROGRAM AE

## About the PROGRAM AE function

You can select from three PROGRAM AE modes to fit the shooting situation. Set AUTO LOCK/HOLD to the centre position. Press PROGRAM AE, then select the desired mode by turning the control dial. Each time you turn the dial, the indicator in the viewfinder changes: AE A (Aperture Priority) ←→ AE S (Shutter Priority) ←→ ☽ (Twilight).

## Acerca de la función PROGRAM AE

Es posible seleccionar el modo PROGRAM AE, de los tres existentes, que mejor se adapte a la situación de filmación. Ajuste AUTO LOCK/HOLD en la posición central. Pulse PROGRAM AE y, a continuación, seleccione el modo que desee girando el dial de control. Cada vez que gire el dial, el indicador del visor electrónico cambia de la siguiente forma: AE A (Prioridad de apertura) ←→ AE S (Prioridad de obturación) ←→ ☽ (Modo crepuscular).



**Note on recording in PROGRAM AE**

We recommend that you adjust the focus and white balance manually.

**Nota sobre la grabación con la función PROGRAM AE**

Se recomienda ajustar manualmente el enfoque y el balance de blancos.

## Using the aperture priority mode

You can select the aperture to determine the desired depth of focus field. The shutter speed is automatically set (between 1/50 and 1/1750) according to the aperture value to maintain appropriate exposure.

**(1)** Set AUTO LOCK/HOLD to the centre position.

**(2)** Press PROGRAM AE so that the indicator appears in the viewfinder.

**(3)** Turn the control dial to select AE A, then press the dial.

**(4)** Turn the control dial to select the desired aperture value. You can select from the following 15 values: F1.6, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9. 6, F11, F14, F16, F19. For a smaller aperture, select a higher value.

## Uso del modo de prioridad de apertura

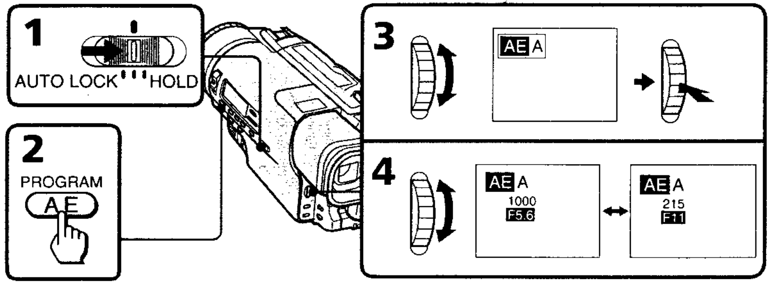
Es posible seleccionar la apertura para determinar la profundidad que desee correspondiente al campo de enfoque. La velocidad de obturación se ajusta automáticamente (entre 1/50 y 1/1750) en función del valor de apertura para mantener la exposición adecuada.

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.

**(2)** Pulse PROGRAM AE para que el indicador aparezca en el visor electrónico.

**(3)** Gire el dial de control para seleccionar AE A y, a continuación, púlselo.

**(4)** Gire el dial de control para seleccionar el valor de apertura que desee. Es posible realizar la selección de alguno de los 15 valores siguientes: F1.6, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9. 6, F11, F14, F16, F19. Para obtener una apertura menor, seleccione un valor mayor.



### To return to automatic adjustment mode

Set AUTO LOCK/HOLD to AUTO LOCK, or press PROGRAM AE so that no indicator appears in the viewfinder.

**About the depth of focus field**

The depth of focus field is the in-focus range measured from the distance behind a subject to the distance in front. The depth of focus field can vary with the aperture value and the focal length. Lowering the F value (larger aperture) reduces the depth of focus field. Raising the F value (smaller aperture) provides a larger depth of focus field. Zooming in telephoto position offers a smaller depth of focus field while the depth of focus field in wide-angle position is greater.

### Para volver al modo de ajuste automático

Ajuste AUTO LOCK/HOLD en AUTO LOCK, o pulse PROGRAM AE hasta que el visor electrónico no muestre ningún indicador.

**Acerca de la profundidad del campo de enfoque**

La profundidad del campo de enfoque es el área que se encuentra dentro del enfoque, medida a partir de la distancia existente detrás y delante del objeto. Esta profundidad puede variar con el valor de apertura y la distancia focal. Si disminuye el valor F (apertura mayor), la profundidad del campo de enfoque se reduce, mientras que si aumenta (apertura menor), la profundidad del campo de enfoque se amplía. El uso del zoom en la posición de telefoto proporciona una menor profundidad del campo de enfoque, mientras que dicha profundidad será mayor en la posición de gran angular.

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# Using the PROGRAM AE Function

# Uso de la función PROGRAM AE

## Using the shutter priority mode

You can select the shutter speed between 1/50 and 1/10000. When you select a faster shutter speed, movement appears clearer with less shaking. The aperture value is automatically adjusted according to the selected shutter speed to maintain appropriate exposure. This mode is most effective when you shoot the picture with high-speed movement.
Note that the shutter speed is indicated in the viewfinder as, for example, "100" for 1/100 shutter speed.

**(1)** Set AUTO LOCK/HOLD to the centre position.

**(2)** Press PROGRAM AE so that the indicator appears in the viewfinder.

**(3)** Turn the control dial to select AE S, then press the dial.

**(4)** Turn the control dial to select the desired shutter speed. You can select from the following 16 speeds: 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000. For a faster shutter speed, select a larger value indicator in the viewfinder.

## Uso del modo de prioridad de obturación

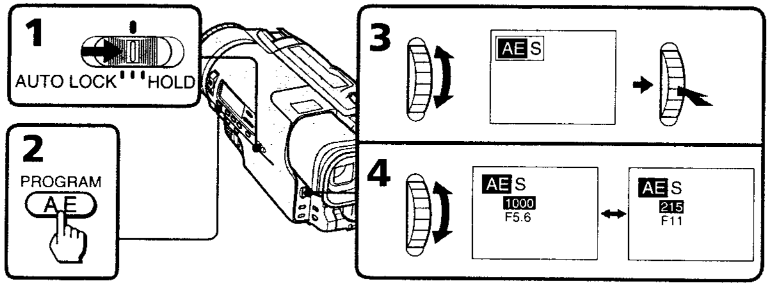
Es posible seleccionar la velocidad de obturación entre 1/50 y 1/10000. Si selecciona una velocidad de obturación mayor, el movimiento aparece con más nitidez y con menos vibración. El valor de apertura se ajusta automáticamente según la velocidad de obturación seleccionada para mantener la exposición adecuada. Este modo resulta más efectivo cuando filme imágenes con movimientos a alta velocidad.
Observe que la velocidad de obturación aparece indicada en el visor electrónico, como por ejemplo "100" para la velocidad de obturación de 1/100.

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.

**(2)** Pulse PROGRAM AE para que el indicador aparezca en el visor electrónico.

**(3)** Gire el dial de control para seleccionar AE S y, a continuación, púlselo.

**(4)** Gire el dial de control para seleccionar la velocidad de obturación que desee. Es posible realizar la selección de alguna de las 16 velocidades de obturación siguientes: 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000. Para obtener una velocidad de obturación mayor, seleccione un indicador del visor electrónico de valor mayor.



### To return to automatic adjustment mode

Set AUTO LOCK/HOLD to AUTO LOCK, or press PROGRAM AE so that no indicator appears in the viewfinder.

### Para volver al modo de ajuste automático

Ajuste AUTO LOCK/HOLD en AUTO LOCK, o pulse PROGRAM AE hasta que el visor electrónico no muestre ningún indicador.

**When the aperture value is automatically adjusted to F1.6**
We recommend shooting in sunlight or using a video light (not supplied).

**When shooting a very bright subject**
A vertical band (smear) may appear on the screen if the shutter speed is set too high.

### To select the best shutter speed

| Subject | Shutter speed |
|---|---|
| • A golf swing or tennis match in fine weather (to view the hit ball clearly in still picture mode, set to 1/1000 to 1/3500) | 1/600 – 1/10000 |
| • A landscape shot from a moving car<br>• A moving roller coaster in overcast days<br>• An athletic scene, marathon, etc. | 1/120 – 1/425 |
| • Indoor sports<br>• Replacement for the ND2 filter (to have the exposure)<br>• Recording pictures with less flicker under a fluorescent lamp | 1/100 |
| • In sunny weather (to avoid an out-of-focus picture due to a small aperture) | 1/75 |

**Si el valor de apertura se ajusta automáticamente en F1.6**
Se recomienda filmar con luz solar o con una lámpara de vídeo (no suministrada).

**Cuando filme objetos muy brillantes**
Es posible que aparezca una banda vertical (mancha) en la pantalla si ha ajustado la velocidad de obturación en valores demasiado altos.

### Para seleccionar la velocidad de obturación más adecuada

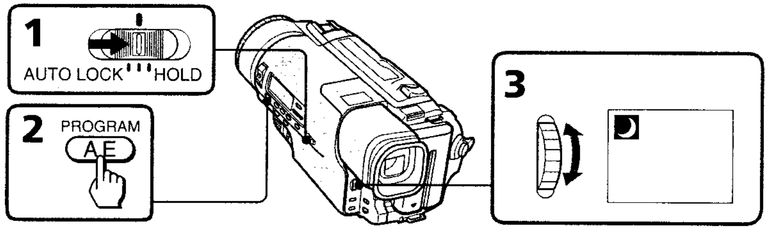
| Objeto | Velocidad de obturación |
|---|---|
| • Un golpe de golf o un partido de tenis con buenas condiciones atmosféricas (para visualizar con nitidez el golpe de la pelota en el modo de imagen fija, ajuste una velocidad comprendida entre 1/1000 y 1/3500) | 1/600 – 1/10000 |
| • La filmación de un paisaje desde un automóvil en movimiento<br>• Una montaña rusa en movimiento en días descubiertos<br>• Una escena de atletismo, maratón, etc. | 1/120 – 1/425 |
| • Deportes en interiores<br>• Sustitución para el filtro ND2 (para obtener la exposición)<br>• Grabación de imágenes con menor parpadeo bajo una lámpara fluorescente | 1/100 |
| • Con tiempo soleado (para evitar el desenfoque de la imagen debido a una pequeña apertura) | 1/75 |

## Using the PROGRAM AE Function

### Using the twilight mode

You can record a bright subject in a dark place without ruining the atmosphere. The aperture is automatically adjusted to maintain the appropriate exposure. The shutter speed is fixed at 1/50. This mode is effective when you record night views, neon signs or fireworks.

**(1)** Set AUTO LOCK/HOLD to the centre position.
**(2)** Press PROGRAM AE so that the indicator appears in the viewfinder.
**(3)** Turn the control dial to select ☽ indicator.



### To return to automatic adjustment mode

Set AUTO LOCK/HOLD to AUTO LOCK, or press PROGRAM AE so that no indicator appears in the viewfinder.

**When shooting an excessively bright subject**
Autofocus may not work effectively. Focus manually then.

## Uso de la función PROGRAM AE

### Uso del modo crepuscular

Es posible grabar objetos brillantes en lugares oscuros sin estropear el ambiente. La apertura se ajusta automáticamente para mantener la exposición adecuada, mientras que la velocidad de obturación se fija en 1/50. Este modo resulta efectivo al grabar vistas nocturnas, letreros de neón o fuegos artificiales.

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.
**(2)** Pulse PROGRAM AE para que el indicador aparezca en el visor electrónico.
**(3)** Gire el dial de control para seleccionar el indicador ☽.

### Para volver al modo de ajuste automático

Ajuste AUTO LOCK/HOLD en AUTO LOCK, o pulse PROGRAM AE para que el visor electrónico no muestre ningún indicador.

**Al filmar objetos excesivamente brillantes**
Es posible que el modo de enfoque automático no resulte efectivo. En este caso, realice el enfoque manualmente.

# Using manual mode

The manual mode features an advanced recording technique by controlling the exposure with a combination of adjustments of the aperture value, shutter speed and gain level.

## When to use manual mode

# Uso del modo manual

El modo manual ofrece una avanzada técnica de grabación, que permite controlar la exposición con una combinación de ajustes del valor de apertura, velocidad de obturación y nivel de ganancia.

## Cuándo emplear el modo manual

**[a]**

**[b]**

**[c]**

**[d]**

- When the background is too bright (backlighting) **[a]**, open the aperture (lower F value).
- When the subject is bright with dark background **[b]**, close the aperture (higher F value).
- When the subject moves at high speed **[c]**, set the shutter speed value faster.
- When a dark scene is shot overexposed **[d]**, lower the gain.

| Item | | Selectable steps | Variation of exposure | Brighter ↕ Darker |
|---|---|---|---|---|
| **Aperture** | | 16 steps | 0.5 EV | F1.6<br>↕<br>F19 (CLOSE) |
| **Shutter speed** | | Fast:<br>16 steps | 0.5 EV | 1/50<br>↕<br>1/10000 |
| | **CCD-TR3300E only** | Slow:<br>4 steps | 1.0 EV | 1/3<br>↕<br>1/25 |
| **Gain** | | 8 steps | 0.5 EV | +18 dB<br>↕<br>-3 dB |

### Note on recording in manual mode

We recommend that you adjust the focus and white balance manually.

- Si el fondo es demasiado brillante (iluminación a contraluz) **[a]**, abra la apertura (valor F más bajo).
- Si el objeto presenta brillo con un fondo oscuro **[b]**, cierre la apertura (valor F más alto).
- Si el objeto se mueve a alta velocidad **[c]**, ajuste la velocidad de obturación en un valor mayor.
- Si filma una escena oscura con exceso de exposición **[d]**, disminuya la ganancia.

| Elemento | | Intervalos seleccionables | Variación de exposición | Más brillante ↕ Más oscuro |
|---|---|---|---|---|
| **Apertura** | | 16 intervalos | 0,5 EV | F1.6<br>↕<br>F19 (CLOSE) |
| **Velocidad de obturación** | | Rápido: 16 intervalos | 0,5 EV | 1/50<br>↕<br>1/10000 |
| | **sólo CCD-TR3300E** | Lento: 4 intervalos | 1,0 EV | 1/3<br>↕<br>1/25 |
| **Ganancia** | | 8 intervalos | 0,5 EV | +18 dB<br>↕<br>-3 dB |

### Nota sobre la grabación en modo manual

Se recomienda ajustar manualmente el enfoque y el balance de blancos.

## Shooting in manual mode

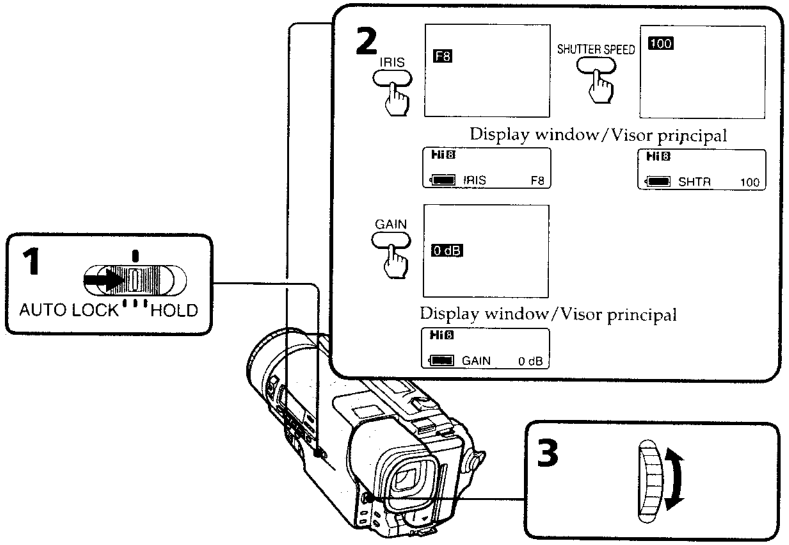
In manual mode, you can adjust the aperture, shutter speed and gain independently. Use the graph on page 71 for your reference to set a value of each item.

**(1)** Set AUTO LOCK/HOLD to the centre position.
**(2)** Press the button of the item you want to adjust (IRIS, SHUTTER SPEED, or GAIN).
**(3)** Turn the control dial to adjust the selected item.

## Filmación en modo manual

En este modo, es posible ajustar por separado la apertura, la velocidad de obturación y la ganancia. Para ajustar el valor de cada elemento, emplee como referencia el gráfico de la página 71.

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.
**(2)** Pulse el botón del elemento que desee ajustar (IRIS, SHUTTER SPEED o GAIN).
**(3)** Gire el dial de control para ajustar el elemento seleccionado.



## Adjustment of each item

### To adjust the aperture

You can select the aperture from the following 16 values: F1.6, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14, F16, F19, CLOSE. To open the aperture (larger aperture), select a lower value.

## Ajuste de cada elemento

### Para ajustar la apertura

Es posible seleccionar la apertura entre los 16 valores siguientes: F1.6, F2, F2.4, F2.8, F3.4, F4, F4.8, F5.6, F6.8, F8, F9.6, F11, F14, F16, F19, CLOSE. Para abrir la apertura (apertura mayor), seleccione un valor inferior.

### To adjust the shutter speed

You can select the shutter speed from the following 20 (CCD-TR3300E), or 16 (CCD-TR2200E) speeds:
— CCD-TR3300E:
1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000.
— CCD-TR2200E:
1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000.
To increase the shutter speed, select a smaller setting (larger value indicator in the viewfinder).

### To adjust the gain

You can select the gain from the following 8 levels: -3 dB, 0 dB, +3 dB, +6 dB, +9 dB, +12 dB, +15 dB, +18 dB. To increase the gain to brighten the picture, select a higher level.
If you adjusted the aperture manually prior to adjusting the gain, the gain level is set according to the aperture setting.

## To change the setting

Press the button of the item you want to change so that the selected item indicator highlights in the viewfinder. Turn the control dial to change to the desired setting.

## To lock the manual settings

After adjusting the setting, set AUTO LOCK/HOLD to HOLD. The IRIS, SHUTTER SPEED, GAIN, WHT BAL buttons and the control dial do not work in these manual settings.

## To return to automatic adjustment mode

Press repeatedly the button of the item you want to return to automatic adjustment mode until the indicator disappears in the viewfinder. To return all the items to automatic mode, set AUTO LOCK/HOLD to AUTO LOCK.

### Note on gain level

When you select a gain level that is too high, the picture may be distorted.

### Para ajustar la velocidad de obturación

Es posible seleccionar la velocidad de obturación entre las 20 (CCD-TR3300E) o 16 (CCD-TR2200E) velocidades siguientes:
— CCD-TR3300E:
1/3, 1/6, 1/12, 1/25, 1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000.
— CCD-TR2200E:
1/50, 1/75, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/10000
Para aumentar la velocidad de obturación, seleccione un ajuste menor (indicador de valor mayor del visor electrónico).

### Para ajustar la ganancia

Es posible seleccionar la ganancia entre los 8 niveles siguientes: -3 dB, 0 dB, +3 dB, +6 dB, +9 dB, +12 dB, +15 dB, +18 dB. Para aumentar la ganancia con el fin de incrementar el brillo de la imagen, seleccione un nivel mayor.
Si ajusta manualmente la apertura antes de ajustar la ganancia, el nivel de ésta se define en función del ajuste de apertura.

## Para cambiar el ajuste

Pulse el botón correspondiente al elemento que desee cambiar de forma que el indicador del elemento seleccionado aparezca resaltado en el visor electrónico. Gire el dial de control para cambiar al ajuste que desee.

## Para bloquear los ajustes manuales

Después de realizar el ajuste, sitúe AUTO LOCK/HOLD en HOLD. Los botones IRIS, SHUTTER SPEED, GAIN, WHT BAL y el dial de control no funcionarán en estos ajustes manuales.

## Para volver al modo de ajuste automático

Pulse varias veces el botón del elemento que desee recuperar en modo de ajuste automático hasta que el indicador desaparezca del visor electrónico. Para recuperar todos los elementos en modo automático, ajuste AUTO LOCK/HOLD en AUTO LOCK.

### Nota sobre el nivel de ganancia

Si selecciona un nivel de ganancia demasiado alto, la imagen puede distorsionarse.

# Using slow shutter (CCD-TR3300E only)

# Uso del obturador a baja velocidad (sólo CCD-TR3300E)

If you want to record a dark picture brightly, or represent the movement of the subject lively, set the shutter speed to 1/25, 1/12, 1/6 or 1/3 (Slow shutter).

**(1)** Set AUTO LOCK/HOLD to the centre position.

**(2)** Press SHUTTER SPEED.
The shutter speed value indicator appears in the display.

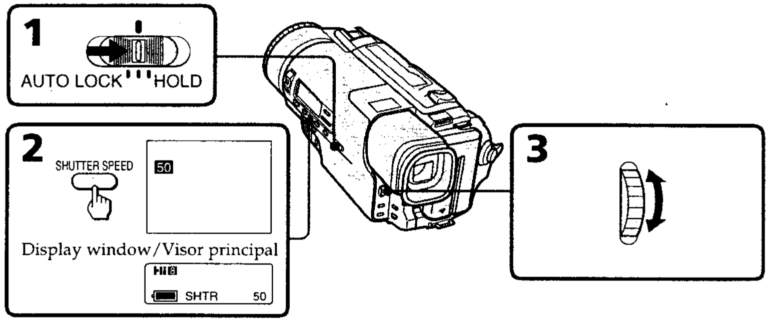
**(3)** Turn the control dial to select the desired shutter speed (1/25, 1/12, 1/6 or 1/3). As the indicator in the viewfinder becomes smaller, the shutter speed becomes slower.

Si desea grabar con brillo una imagen oscura o representar vivamente el movimiento del objeto, ajuste la velocidad de obturación en 1/25, 1/12, 1/6 o 1/3 (Obturación a baja velocidad).

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.

**(2)** Pulse SHUTTER SPEED.
El visor muestra el indicador de valor de velocidad de obturación.

**(3)** Gire el dial de control para seleccionar la velocidad de obturación que desee (1/25, 1/12, 1/6 o 1/3). Esta será más lenta según disminuye el indicador del visor electrónico.



## To return to automatic adjustment mode

Press SHUTTER SPEED repeatedly until the shutter speed value indicator disappears in the viewfinder.

## When recording with slow shutter function

- You cannot use flash motion, overlap, wipe, still or luminauncekey function.
- Autofocus may not be effective. Focus manually using a tripod.

## Para volver al modo de ajuste automático

Pulse SHUTTER SPEED varias veces hasta que el indicador de valor de velocidad de obturación desaparezca del visor electrónico.

## Si graba con la función de obturador a baja velocidad

- No es posible emplear las funciones de movimiento por impulsos, superposición, desplazamiento de imágenes, imagen fija ni de luminancia.
- El enfoque automático puede no ser efectivo. Realice el enfoque manualmente empleando un trípode.

# Tips for manual adjustment

When you shoot in manual adjustment mode, we recommend you to keep the exposure fixed to make a clear picture. This section shows you what the exposure is and how to adjust each item with the exposure fixed.

## Understanding the exposure

Exposure is determined by aperture, shutter speed and gain, and is measured in EV (exposure value) as shown below.

**Total EV = EV from aperture control**
**+ EV from shutter speed control**
**+ EV from gain control**

The total exposure value can be varied or maintained at a constant level by controlling the aperture, gain and shutter speed.

Use the following graph to select the setting. One scale corresponds to 0.5 EV.

**[a]** Vertical axis: Aperture value (F value)
**[b]** Horizontal axis: Shutter speed (per second)
**[c]** Diagonal axis: Gain level (dB)

# Consejos relativos a ajustes manuales

Si filma en modo de ajuste manual, se recomienda mantener fija la exposición con el fin de obtener imágenes nítidas. En esta sección se describe el concepto de exposición y el procedimiento de ajuste de cada elemento con la exposición fijada.

## Concepto de exposición

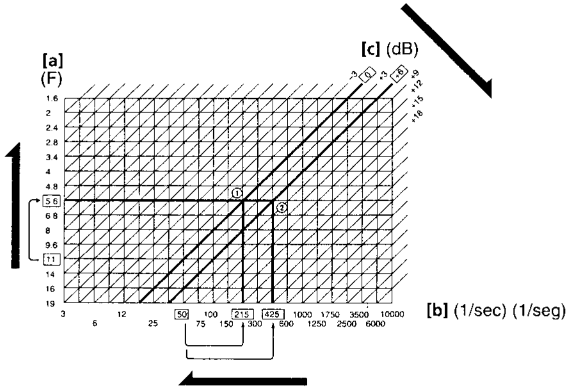
La exposición se determina mediante la apertura, velocidad de obturación y ganancia, y se mide en EV (valor de exposición) como se muestra a continuación.

**EV total= EV del control de apertura**
**+ EV del control de velocidad de obturación**
**+ EV del control de ganancia**

El valor total de exposición puede modificarse o mantenerse en un nivel constante mediante el control de la apertura, ganancia y velocidad de obturación.

Utilice el siguiente gráfico para seleccionar el ajuste. Una escala corresponde a un EV de 0,5.

**[a]** Eje vertical: Valor de apertura (valor F)
**[b]** Eje horizontal: Velocidad de obturación (por segundo)
**[c]** Eje diagonal: Nivel de ganancia (dB)



➡ : Brighter/Más brillante

### Creating a desired picture without changing the exposure

**When the aperture value is F11, the shutter speed is 1/50, and the gain level is 0 dB, adjust the aperture value manually to F5.6, as an example.**
If you change the aperture value from F11 to F5.6 in the above example, the exposure from aperture control becomes brighter by +2 EV. Adjust the shutter speed and the gain so that the exposure becomes darker by –2 EV to not change the total exposure.

**Example 1: changing only the shutter speed**
To reduce the exposure by –2 EV using the shutter speed, you should change the shutter speed from 1/50 to 1/215 (①). (5 steps increase)

**Example 2: setting the shutter speed to 1/425 and changing the gain level**
When the shutter speed is changed from 1/50 to 1/425, the EV from the shutter speed control changes to –3 EV. To maintain total exposure, +1 EV (2 steps) should be added by increasing the gain level. Change the gain level from 0 dB to +6 dB (②). Note that when you set the gain level higher, the picture may be distorted.

**Notes on manual adjustment**
- When recording outdoors, the brightness of a subject may be affected by weather.
- When recording conditions change, we recommend that you reset each item.

### Creación de una imagen determinada sin cambiar la exposición

**Si el valor de apertura es F11, la velocidad de obturación 1/50 y el nivel de ganancia 0 dB, ajuste manualmente el valor de apertura en F5.6 a modo de ejemplo.**
Si varía el valor de apertura de F11 a F5.6 en el ejemplo anterior, la exposición del control de apertura será más brillante en +2 EV. Ajuste la velocidad de obturación y la ganancia de forma que la exposición se oscurezca en –2 EV y la exposición total no varíe.

**Ejemplo 1: Modificación sólo de la velocidad de obturación**
Para reducir la exposición en –2 EV empleando la velocidad de obturación, cambie ésta de 1/50 a 1/215 ①. (incremento de 5 intervalos)

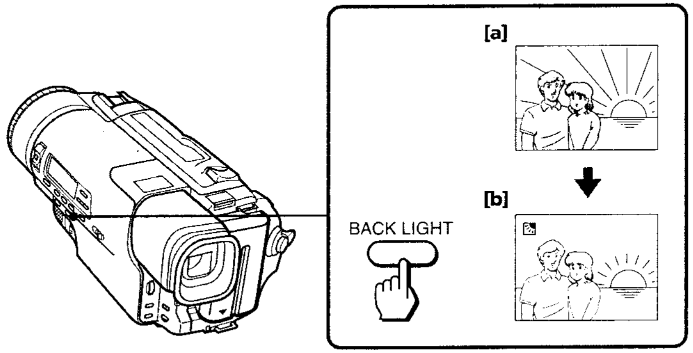
**Ejemplo 2: Ajuste de la velocidad de obturación en 1/425 y cambio del nivel de ganancia**
Si cambia la velocidad de obturación de 1/50 a 1/425, el valor EV del control de dicha velocidad cambia a –3 EV. Para mantener la exposición total, debe añadirse el valor +1 EV (2 intervalos) incrementando el nivel de ganancia. Cambie éste de 0 dB a +6 dB ②. Observe que si ajusta el nivel de ganancia en un valor superior, la imagen puede distorsionarse.

**Notas sobre el ajuste manual**
- Si graba en exteriores, el brillo del objeto puede verse afectado por las condiciones meteorológicas.
- Si las condiciones de grabación cambian, se recomienda ajustar cada elemento.

# Shooting with backlighting

When you shoot a subject with the light source behind the subject or a subject with a light background, use the BACK LIGHT function.

Press BACK LIGHT. The ⊠ indicator appears in the viewfinder.



**[a]** Subject is too dark because of backlight.
**[b]** Subject becomes bright with backlight compensation.

### After shooting

Be sure to release this adjustment condition by pressing BACK LIGHT again. The ⊠ indicator disappears. Otherwise, the picture will be too bright under normal lighting conditions.

**This function is also effective under following conditions:**

- On snow, e.g. at a ski resort
- At the beach under strong sunshine
- A subject with a light source nearby or a mirror reflecting light
- A white subject against a white background. Especially when you shoot a person wearing shiny clothes made of silk or synthetic fiber, his or her face tends to become dark if you do not use this function.

**Note on the backlight function**

If you press IRIS, SHUTTERSPEED or GAIN, the backlight function is cancelled.

# Filmación a contraluz

Si filma un objeto con la fuente luminosa situada detrás de él, o bien un objeto con un fondo luminoso, emplee la función BACK LIGHT.

Pulse BACK LIGHT. El indicador ⊠ aparece en el visor electrónico.

**[a]** El objeto presenta demasiada oscuridad debido a la iluminación de fondo.
**[b]** El objeto presenta más brillo con la compensación de la iluminación de fondo.

### Tras la filmación

Asegúrese de cancelar este ajuste; para ello, vuelva a pulsar BACK LIGHT. El indicador ⊠ desaparecerá. En caso contrario, la imagen presentará demasiado brillo en condiciones normales de iluminación.

**Esta función resulta también efectiva en las siguientes condiciones:**

- En la nieve, por ejemplo, en una estación de esquí
- En la playa con intensa iluminación solar
- Objetos con fuentes de iluminación cercanas o con espejos que reflejen luz
- Objetos blancos con fondo blanco. Especialmente si filma una persona cuyas prendas de vestir sean brillantes y confeccionadas con seda o fibras sintéticas, su rostro tenderá a oscurecerse si no emplea esta función.

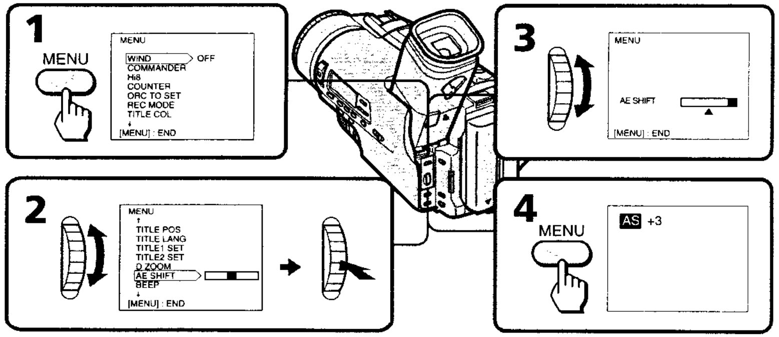
**Nota sobre la función de filmación a contraluz**

Si pulsa IRIS, SHUTTERSPEED o GAIN, esta función se cancelará.

# Adjusting the brightness of the picture

When you shoot in a snowfield or on a beach in the mid-summer and the subject may become dark because of the extreme brightness, you can change the brightness of the picture in the menu system. You can also use this function when the subject is too bright — subjects on stages, night views, etc.

**(1)** While the camcorder is in Standby mode, press MENU to display the menu in the viewfinder.
**(2)** Turn the control dial to select AE SHIFT, then press the control dial.
**(3)** Turn the control dial to adjust the brightness of the picture. The picture becomes brighter when you turn the control dial up, and darker when you turn the control dial down.
**(4)** Press MENU. The menu display disappears and the AE shift indicator appears in the viewfinder.



### To cancel the AE shift

Set AE SHIFT to the centre position in the menu system.

**When adjusting the brightness**

We recommend you to connect the camcorder to a TV so that you can monitor the brightness on the TV.

**Note on the AE shift**

You cannot change AE shift while adjusting the aperture manually.

# Ajuste del brillo de la imagen

Cuando filme en una zona nevada o en una playa en pleno verano y el objeto se oscurezca debido al exceso de brillo, es posible cambiar el brillo de la imagen en el sistema de menú. Igualmente puede emplear esta función si el objeto presenta demasiado brillo — objetos sobre escenarios, vistas nocturnas, etc.

**(1)** Mientras la videocámara se encuentra en modo de espera, pulse MENU para que el menú aparezca en el visor electrónico.
**(2)** Gire el dial de control para seleccionar AE SHIFT y, a continuación, púlselo.
**(3)** Gire el dial de control para ajustar el brillo de la imagen. El brillo de ésta aumentará al girar el dial hacia arriba, y disminuirá al girarlo hacia abajo.
**(4)** Pulse MENU. El menú desaparecerá, mientras que el indicador de desplazamiento AE aparecerá en el visor electrónico.

### Para cancelar el desplazamiento AE

Ajuste AE SHIFT en la posición central en el sistema de menú.

**Al ajustar el brillo**

Se recomienda conectar la videocámara a un televisor para poder controlar el brillo en éste.

**Nota sobre el desplazamiento AE**

No es posible cambiar el desplazamiento AE mientras ajusta manualmente la apertura.

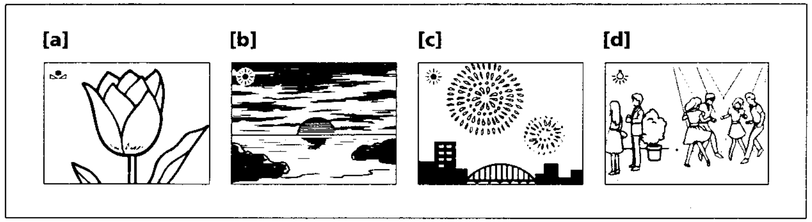
# Adjusting the white balance

# Ajuste del balance de blancos

White balance is the adjustment to make white subjects look white and to obtain a more natural colour balance.

## Selecting the appropriate mode

Select the appropriate white balance mode under the following conditions:



### One push white balance mode

- Shooting with the lighting condition on the subject set and with the white balance set in a particular condition
- Monochromatic subject or background **[a]**

### Outdoor mode

- Under a colour matching fluorescent lamp
- Recording a sunset/sunrise, just after sunset, just before sunrise **[b]**, neon signs, or fireworks **[c]**

### Indoor mode

- Lighting condition changes quickly. **[d]**
- Too bright place such as photography studios
- Under sodium lamps or mercury lamps

When you shoot under a fluorescent lamp, however, we recommend you to adjust the white balance automatically. You may not get an appropriate white balance when you record in the indoor mode.

Este ajuste se realiza para que los objetos blancos parezcan blancos y para obtener un balance de color más natural.

## Selección del modo adecuado

Seleccione el modo adecuado de balance de blancos en la siguientes condiciones:

### Modo de balance de blancos con un solo movimiento

- Filmación con la condición de iluminación del objeto ajustada y con el balance de blancos ajustado en una determinada condición
- Objeto o fondo monocromático **[a]**

### Modo de exteriores

- Bajo una lámpara fluorescente con concordancia de colores
- Grabación de puestas y salidas del sol, inmediatamente después de la puesta de sol, inmediatamente antes de la salida del sol **[b]**, letreros de neón o fuegos artificiales **[c]**

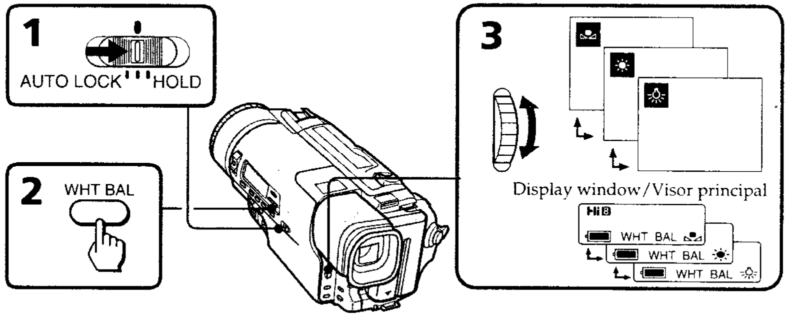
### Modo de interiores

- La condición de iluminación cambia rápidamente. **[d]**
- Lugares con demasiada iluminación, como estudios fotográficos
- Con lámparas de sodio o de mercurio

No obstante, se recomienda ajustar el balance de blancos automáticamente cuando filme con lámparas fluorescentes. Es posible que no obtenga un balance de blancos adecuado cuando grabe en el modo de interiores.

## Setting the white balance mode

**(1)** Set AUTO LOCK/HOLD to the centre position.
**(2)** Press WHT BAL so that the white balance indicator appears in the viewfinder.
**(3)** Turn the control dial to select the desired mode.
When you select one push white balance mode, press the control dial after selecting the one push white balance indicator.



### To return to automatic white balance mode

Press WHT BAL so that the white balance indicator disappears, or set AUTO LOCK/HOLD to AUTO LOCK.

#### When the light source changes

Adjust the white balance again. You cannot select the one push white balance mode when you are recording.

- When you record in manual adjustment mode, set AUTO LOCK/HOLD to AUTO LOCK once, then set it to the centre position again.
- When you record in automatic adjustment mode, or when you replace the battery pack, point the lens toward a white object for approx. 10 seconds, then start recording.

## Ajuste del modo de balance de blancos

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.
**(2)** Pulse WHT BAL para que el visor electrónico muestre el indicador de balance de blancos.
**(3)** Gire el dial de control para seleccionar el modo que desee.
Si selecciona el modo de balance de blancos con un solo movimiento, pulse el dial de control después de seleccionar el indicador de balance de blancos con un solo movimiento.

### Para volver al modo automático de balance de blancos

Pulse WHT BAL hasta que desaparezca el indicador de balance de blancos, o ajuste AUTO LOCK/HOLD en AUTO LOCK.

#### Si la fuente de iluminación cambia

Vuelva a ajustar el balance de blancos. No es posible seleccionar el modo de balance de blancos con un solo movimiento durante la grabación.

- Cuando grabe en modo de ajuste manual, ajuste AUTO LOCK/HOLD en AUTO LOCK una vez y, a continuación, vuelva a ajustarlo en la posición central.
- Cuando grabe en modo de ajuste automático, o después de haber sustituido el paquete de batería, oriente el objetivo hacia un objeto blanco durante unos 10 segundos y, a continuación, inicie la grabación.

## Adjusting white balance manually (One push white balance mode)

You can set the white balance for a particular lighting condition manually. When the white balance is set manually, the colours of the object being shot will continue to look natural as long as the lighting conditions remain the same.
When a particular colour is shot under different lighting sources, the colour often seems to change color. When shooting subjects under changing lighting conditions, set the white balance to the AUTO mode; the subject colours will remain consistent even under changing lighting conditions.

**(1)** Set AUTO LOCK/HOLD to the centre position.
**(2)** Press WHT BAL, then turn the control dial to select one push white balance indicator.
**(3)** Attach the supplied white lens cap and point the camcorder at a subject if you are shooting outdoors or at a source of light if shooting indoors.
**(4)** Press the control dial.
The one push white balance indicator starts to flash quickly. Once the white balance is set, the indicator stops flashing.

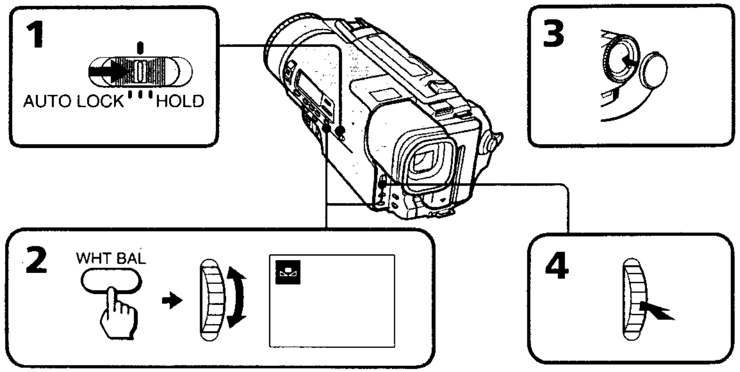
When you are shooting under studio lighting or a video light, we recommend you to record in indoor mode.

## Ajuste manual (modo de balance de blancos con un solo movimiento)

Es posible ajustar manualmente el balance de blancos para determinadas condiciones de iluminación. Si lo ajusta manualmente, los colores del objeto que esté filmando continuarán mostrándose naturales siempre que las condiciones de iluminación no cambien. Si filma un determinado color con fuentes de iluminación diferentes, a menudo dicho color parece cambiar. Cuando filme objetos bajo condiciones de iluminación cambiantes, ajuste el balance de blancos en modo AUTO; de esta forma, los colores del objeto permanecerán estables aunque dichas condiciones sean cambiantes.

**(1)** Ajuste AUTO LOCK/HOLD en la posición central.
**(2)** Pulse WHT BAL y, a continuación, gire el dial de control para seleccionar el indicador de balance de blancos con un solo movimiento.
**(3)** Fije la tapa blanca del objetivo suministrada y oriente la videocámara hacia un objeto si filma en exteriores o hacia una fuente de iluminación si filma en interiores.
**(4)** Pulse el dial de control.
El indicador de balance de blancos con un solo movimiento comienza a parpadear rápidamente. Una vez ajustado el balance de blancos, el indicador dejará de parpadear.

Cuando filme con iluminación de estudio o con una lámpara de vídeo, se recomienda grabar en modo de interiores.



## Adjusting the white balance

## Ajuste del balance de blancos

### To return to automatic white balance adjustment mode

Press WHT BAL so that the one push white balance indicator disappears in the viwfinder.

### Note on the one push white balance mode indicator

Slowly flashing indicator: white balance has not been set.
Quickly flashing indicator: white balance is being adjusted with the control dial.
Lighting: white balance has been set.

### Note on the one push white balance mode setting

The white balance setting for one push white balance mode is retained even when you turn the power off or change white balance mode, as long as the power source is installed in the camcorder. The setting is retained for about 1 hour even when you disconnect the power source if the lithium battery is installed in the camcorder.

### If the one push white balance indicator does not stop flashing when you press the control dial

The lighting is probably insufficient or you have forgotten to put the white lens cap on. If this appears to be the case, increase the lighting or attach the white cap and try again. If the indicator still continues to flash after trying this, press WHT BAL to set the camcorder to the automatic white balance mode (no indicator) or set AUTO LOCK/HOLD to AUTO LOCK.

### Para volver al modo de ajuste automático del balance de blancos

Pulse WHT BAL para que el indicador de balance de blancos con un solo movimiento desaparezca del visor electrónico.

### Nota sobre el indicador de modo de balance de blancos con un solo movimiento

Indicador con parpadeo lento: No se ha ajustado el balance de blancos. Indicador con parpadeo rápido: El balance de blancos está ajustándose con el dial de control.
Iluminado: El balance de blancos se ha ajustado.

### Nota sobre el ajuste del modo de balance de blancos con un solo movimiento

Este ajuste se mantiene aunque desactive la alimentación o cambie el modo de balance de blancos, siempre que la fuente de alimentación esté instalada en la videocámara. El ajuste se conserva durante 1 hora aproximadamente aunque desconecte la fuente de alimentación si la pila de litio está instalada en la videocámara.

### Si el indicador de balance de blancos con un solo movimiento no deja de parpadear al pulsar el dial de control

Probablemente la iluminación es insuficiente o ha olvidado colocar la tapa blanca del objetivo. Si este es el caso, aumente la iluminación o fije la tapa blanca y vuelva a intentarlo. Si aún así el indicador sigue parpadeando, pulse WHT BAL para ajustar la videocámara en el modo automático de balance de blancos (sin indicador) o ajuste AUTO LOCK/HOLD en AUTO LOCK.

## Searching the boundaries of recorded date

You can search for the boundary between recording dates using the Date Code automatically recorded on the tape.
There are two modes:

- Searching for the beginning of a specific date, and playing back from there (**Date Search**)
- Searching for the beginning of all days, one after another, playing back about 10 seconds of each (**Date Scan**)

Each time you press DATE SEARCH, the mode changes as follows:

Date Search → Date Scan → nothing

## Búsqueda de los límites de las fechas de grabación

Es posible buscar los límites de las fechas de grabación mediante el uso del código de fecha grabado automáticamente en la cinta. Existen dos modos:

- Búsqueda de una fecha específica para iniciar la reproducción a partir de ella (**Búsqueda de fechas**)
- Búsqueda del comienzo de todos los días, una tras otro, para reproducir 10 segundos aproximadamente de cada uno de ellos (**Exploración de fechas**)

Cada vez que pulse DATE SEARCH, el modo cambia de la siguiente forma:

Búsqueda de fechas → Exploración de fechas → nada

### To search for the beginning of a specific date

**(1)** Set the POWER switch to PLAYER. The tape transport buttons light up.
**(2)** Press DATE SEARCH on the Remote Commander.
**(3)** When the current position is **[b]**, press ◀◀ to search towards **[a]** or press ▶▶ to search towards **[c]**.

### To scan the beginning of all days

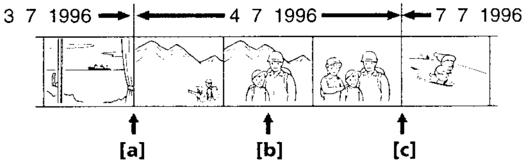
**(1)** Set the POWER switch to PLAYER.
**(2)** Press DATE SEARCH on the Remote Commander twice.
**(3)** Press ◀◀ or ▶▶. Date Scan starts.

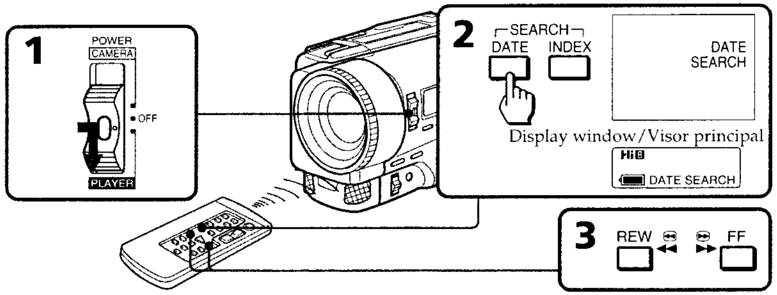
### Para buscar una fecha específica

**(1)** Ajuste el interruptor POWER en PLAYER. Los botones de transporte de cinta se iluminan.
**(2)** Pulse DATE SEARCH en el mando a distancia.
**(3)** Cuando la posición actual sea **[b]**, pulse ◀◀ para realizar la búsqueda hacia **[a]** o ▶▶ para realizar la búsqueda hacia **[c]**.

### Para explorar el comienzo de todos los días

**(1)** Ajuste el interruptor POWER en PLAYER.
**(2)** Pulse DATE SEARCH en el mando a distancia dos veces.
**(3)** Pulse ◀◀ o ▶▶. Se inicia la exploración de fechas.





**To stop searching or scanning**

Press one of the following tape transport buttons: ▷, □, ◀◀ or ▶▶.

**To view pictures during searching or scanning**

Press ▷ and then press ◀◀ or ▶▶.

**Notes on Date Search and Date Scan mode**

- If a day's recording is not longer than 2 minutes, the camcorder may not accurately find its boundaries.
- Date Search and Date Scan do not function on a tape recorded by a camcorder without the Data Code function. Your camcorder has the Data Code function.
- When searching the boundaries of date on the tape, the forwarded or reversed picture appears in the viewfinder. Visual noise also appears during this searching. This is not a mulfunction.

**Para detener la búsqueda o la exploración**

Pulse alguno de los siguientes botones de transporte de cinta: ▷, □, ◀◀ o ▶▶.

**Para visualizar las imágenes durante la búsqueda o la exploración**

Pulse ▷ y, a continuación, ◀◀ o ▶▶.

**Notas sobre los modos de búsqueda y exploración de fechas**

- Si la grabación de un día no es superior a 2 minutos, es posible que la videocámara no localice sus límites con precisión.
- Las funciones de búsqueda y exploración de fechas no se activan si la cinta se ha grabado con una videocámara desprovista de la función de código de datos. Esta videocámara dispone de dicha función.
- Al buscar los límites de fechas en la cinta, el visor electrónico muestra la imagen posterior o anterior. Durante esta búsqueda, aparece también ruido visual; esto no es un fallo de funcionamiento.

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## Returning to a pre-registered position

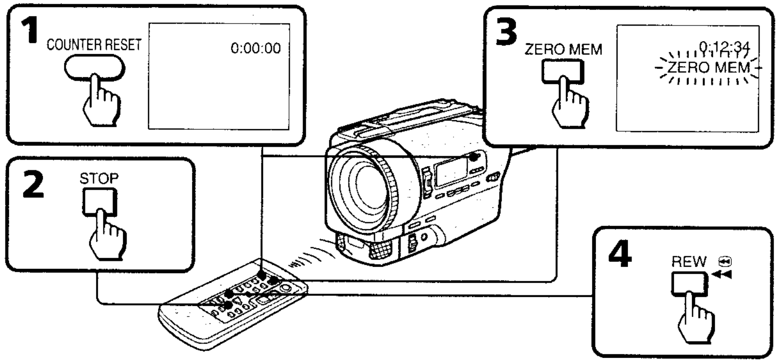
Using the Remote Commander, you can easily go back to the desired point on a tape after playback. Use the tape counter. If the RC time code appears in the viewfinder, set COUNTER to NORMAL in the menu system to display the tape counter.

**(1)** During playback, press COUNTER RESET at the point you later want to locate. The counter shows "0:00:00" in the viewfinder.
**(2)** Press □ when you want to stop playback.
**(3)** Press ZERO MEM on the Remote Commander. The ZERO MEM indicator flashes in the viewfinder.
**(4)** Press ◀◀ to rewind or press ▶▶ to fast-forward the tape to the counter's zero point. The tape stops automatically when the counter reaches approximately zero.

## Localización de posiciones previamente registradas

Mediante el uso del mando a distancia, es posible retroceder fácilmente al punto que desee de la cinta tras la reproducción. Para ello, emplee el contador de cinta. Si el código de tiempos RC aparece en el visor electrónico, ajuste COUNTER en NORMAL en el sistema de menú para visualizar el contador de cinta.

**(1)** Durante la reproducción, pulse COUNTER RESET en el punto que desee localizar posteriormente. El contador mostrará "0:00:00" en el visor electrónico.
**(2)** Pulse □ cuando desee detener la reproducción.
**(3)** Pulse ZERO MEM en el mando a distancia. El indicador ZERO MEM parpadeará en el visor electrónico.
**(4)** Pulse ◀◀ para rebobinar la cinta o ▶▶ para que avance rápidamente hasta el punto cero del contador. La cinta se detendrá automáticamente cuando el contador llegue aproximadamente a cero.



**Notes on the tape counter**

- Something must be recorded on the tape in order for the tape counter to function. Tape counter does not work on a blank tape.
- There may be a discrepancy of several seconds from the actual time.

**Notes on ZERO MEM**

- When you press ZERO MEM, the counter's zero point is memorized. Press ZERO MEM again before rewinding to cancel the memory.
- This function is cancelled automatically once the tape is rewound or advanced to the point you pre-registered.
- ZERO MEM does not function during recording or playing back.

**Notas sobre el contador de cinta**

- Para que este contador se active, es preciso que la cinta contenga alguna grabación. Este contador no se activará si la cinta es virgen.
- Es posible que exista una diferencia de algunos segundos con respecto a la hora real.

**Notas sobre ZERO MEM**

- Si pulsa ZERO MEM, el punto cero del contador se memorizará. Vuelva a pulsar ZERO MEM antes de rebobinar para cancelar la memoria.
- Esta función se cancela automáticamente una vez que la cinta se rebobina o se avanza hasta el punto previamente registrado.
- ZERO MEM no se activa durante la grabación o la reproducción.

# Locating the marking position

# Localización de posiciones marcadas

You can locate the beginning of a desired programme easily by marking an index signal during recording or playback and searching for it later.

## Marking an index signal

You can mark an index signal during recording or playback.

### When marking at the beginning of recording or playback

Press INDEX MARK on the Remote Commander in recording standby or playback pause mode. The INDEX MARK indicator appears in the viewfinder with the MARK indicator flashing. When recording or playback starts, the MARK indicator stops flashing. This shows that the index signal is being marked. Then the INDEX MARK indicator will disappear.

### When marking during recording or playback

Press INDEX MARK on the Remote Commander at the point you want to locate later.

Es posible localizar fácilmente el comienzo del programa que desee mediante la introducción de una señal de índice durante la grabación o la reproducción y buscarla más adelante.

## Introducción de señales de índice

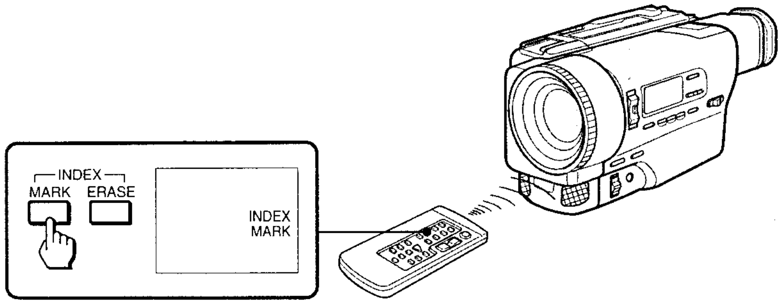
Es posible introducir señales de índice durante la grabación o la reproducción.

### Introducción de señales en el comienzo de la grabación o reproducción

Pulse INDEX MARK en el mando a distancia durante el modo de pausa de reproducción o de espera de grabación. El indicador INDEX MARK aparecerá en el visor electrónico con el indicador MARK parpadeando. Al iniciarse la grabación o la reproducción, el indicador MARK dejará de parpadear. Esto indica que la señal de índice está registrándose. A continuación, el indicador INDEX MARK desaparecerá.

### Introducción de señales durante la grabación o la reproducción

Pulse INDEX MARK en el mando a distancia en el punto que desee localizar más adelante.



# Locating the marking position

# Localización de posiciones marcadas

**Notes on marking**

- Make sure you mark index signals at more than two-minute intervals. Otherwise, you may not be able to search for them correctly.
- If you stop recording while the index signal is being marked (the INDEX MARK indicator lights in the viewfinder), the search may not be completed correctly.
- If you mark an index signal on the tape with the Data Code recorded, the Data Code will be erased at the point on which the index signal is marked. When playing back this tape, the camcorder keeps displaying the Data Code immediately before the erased one.
- A black band appears when you mark index signal during playback, and the sound is not recorded. This does not affect the picture and the sound that are already recorded.
- You cannot mark an index signal on a tape with the red mark on the cassette exposed, or on a tape recorded in LP mode.
- You cannot mark an index signal on an NTSC-recorded tape.

**Notas sobre la introducción de señales**

- Asegúrese de introducir las señales de índice a intervalos superiores a dos minutos, ya que en caso contrario es posible que no pueda localizarlas correctamente.
- Si detiene la grabación mientras la señal de índice está registrándose (el indicador INDEX MARK se ilumina en el visor electrónico), es posible que la búsqueda no se realice correctamente.
- Si introduce una señal de índice en una cinta provista del código de datos, éste se borrará en el punto que introduzca la señal de índice. Al reproducir esta cinta, la videocámara mostrará el código de datos inmediatamente anterior al borrado.
- Si introduce señales de índice durante la reproducción, aparecerá una banda negra y el sonido no se grabará. Esto no afectará a la imagen ni al sonido ya grabados.
- No es posible introducir señales de índice en una cinta con la marca roja del videocassette al descubierto, ni en una cinta grabada en modo LP.
- No es posible introducir señales de índice en cintas grabadas en el sistema NTSC.

## Scanning the beginning of each marking position – index scan

Use the Remote Commander. To view the picture on a TV, press DISPLAY.

**(1)** Press INDEX on the Remote Commander during normal playback.

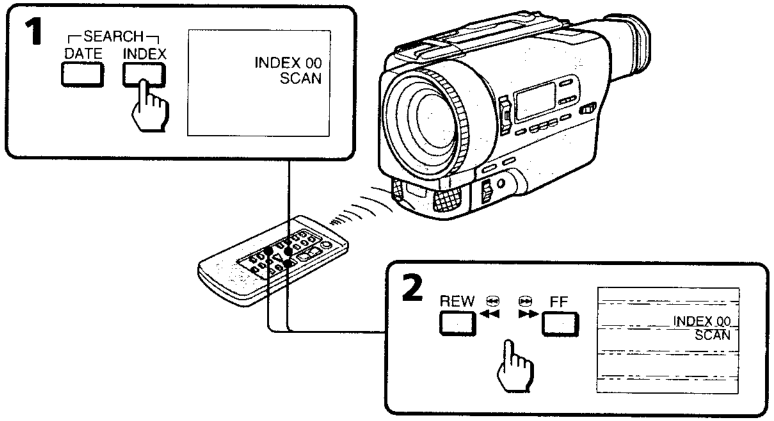
**(2)** Press ◀◀ or ▶▶. The tape rewinds or advances rapidly and plays back for approximately 10 seconds form the point on which the index signal was marked. If you want to continue playback, press ▷. When you do not press any button, the tape is automatically scanned to the next programme.

## Exploración del principio de cada posición marcada – exploración de índices

Emplee el mando a distancia. Si desea visualizar la imagen en un televisor, pulse DISPLAY.

**(1)** Pulse INDEX en el mando a distancia durante la reproducción normal.

**(2)** Pulse ◀◀ o ▶▶. La cinta se rebobina o avanza rápidamente y se reproduce durante aproximadamente 10 segundos a partir del punto en que ha introducido la señal de índice. Si desea continuar la reproducción, pulse ▷. Si no pulsa ningún botón, la unidad explorará la cinta automáticamente hasta el siguiente programa.



### To cancel index scan mode

Press ▷. Normal playback resumes.

### Para cancelar el modo de exploración de índices

Pulse ▷ para reanudar la reproducción normal.

## Locating the marking position

## Localización de posiciones marcadas

### Locating the desired marking position – index search

**(1)** Press INDEX on the Remote Commander during stop or playback mode.

**(2)** Press INDEX repeatedly until the index number of the desired programme is displayed in the viewfinder.

**(3)** Press ◀◀ or ▶▶. Playback starts from the beginning of the desired programme.

**[a]** the current position
**[b]** the INDEX number

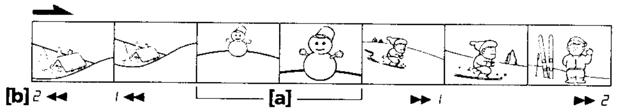
### Localización de la posición marcada que desee – búsqueda de índices

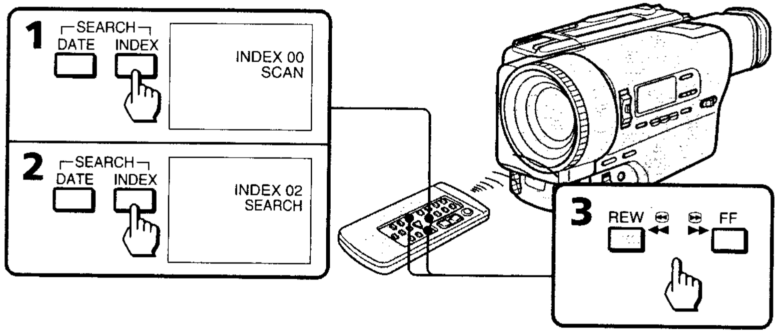
**(1)** Pulse INDEX en el mando a distancia durante el modo de parada o de reproducción.

**(2)** Pulse INDEX varias veces hasta que el visor electrónico muestre el número de índice correspondiente al programa que desee.

**(3)** Pulse ◀◀ o ▶▶. La reproducción se inicia desde el principio del programa seleccionado.

**[a]** posición actual
**[b]** número de índice





### To stop index search mode

Press ▷. Normal playback resumes.

**Note on the index number**

The index number (1, 2, etc.) indicates the distance from the point you are now viewing **[a]**, regardless of the direction.

### Para detener el modo de búsqueda de índices

Pulse ▷ para reanudar la reproducción normal.

**Nota sobre los números de índice**

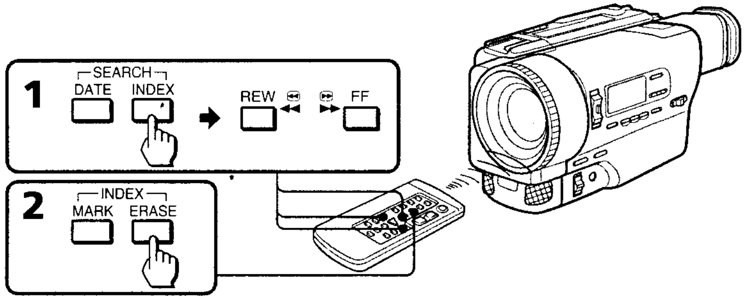
El número de índice (1, 2, etc.) indica la distancia a partir del punto que visualiza actualmente **[a]**, independientemente del sentido.

## Erasing an index signal

**(1)** Locate the index signal to be erased using the index scan or index search function.
**(2)** Press INDEX ERASE on the Remote Commander within 2 to 10 seconds while the desired programme plays back. After the index signal is erased, the camcorder returns to index scan or index search mode, whichever was used in step 1.

## Borrado de señales de índice

**(1)** Localice la señal de índice que desee borrar mediante la función de búsqueda o de exploración de índices.
**(2)** Pulse INDEX ERASE en el mando a distancia en un intervalo de 2 a 10 segundos durante la reproducción del programa que desee. Una vez borrada la señal de índice, la videocámara vuelve al modo de búsqueda o de exploración de índices según el empleado en el paso 1.



### Notes on erasing

- Press INDEX ERASE more than 2 seconds after the playback of the desired programme begins.
- You cannot erase the index signal on a tape with the red mark on the cassette exposed.
- While the index signal is being erased, the sound cannot be heard and a black band appears at the bottom of the picture. This will not affect the recorded sound or picture.
- The camcorder can detect index signals marked with VCRs, but cannot erase them. VCRs with an index function can detect index signals marked with this camcorder but cannot erase them.
- An index signal may be erased when making PCM after recording on another VCR in the portion where the index signal is marked.

### Note on and Data Code

When an index signal is erased, Data Code on the same portion of the tape is also erased.

### Notas sobre el borrado de señales de índice

- Pulse INDEX ERASE durante más de 2 segundos después de comenzar la reproducción del programa que desee.
- No es posible borrar señales de índice en una cinta con la marca roja del videocassette al descubierto.
- Durante el borrado de la señal de índice, no será posible escuchar el sonido y aparecerá una banda negra en la parte inferior de la imagen. Esto no afecta a la imagen ni al sonido grabados.
- La videocámara puede detectar señales de índice introducidas con videograbadoras, aunque no puede borrarlas. Las videograbadoras provistas de la función de índice pueden detectar señales de índice introducidas con esta videocámara, aunque no pueden borrarlas.
- Es posible que se borren señales de índice al emplear el modo PCM después de efectuar la grabación en otra videograbadora en la parte donde se ha introducido la señal de índice.

### Nota sobre el código de datos

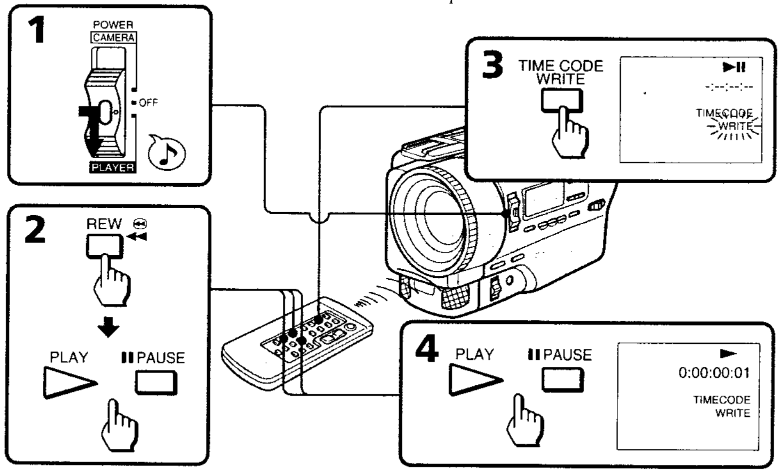
Al borrar una señal de índice, el código de datos situado en la misma parte de la cinta también se borrará.

# Writing the RC Time code on a recorded tape

# Escritura del código de tiempos RC en una cinta grabada

You can write the RC time code on a recorded tape. Use the Remote Commander.
**(1)** While pressing the small green button on the POWER switch, set it to PLAYER.
**(2)** Rewind the tape to the beginning and set the camcorder to playback pause mode.
**(3)** Press TIME CODE WRITE on the Remote Commander. The TIME CODE WRITE indicator appears in the viewfinder with the WRITE indicator flashing.
**(4)** Press ▷ or **II** to start playback. The WRITE indicator stops flashing and the RC time code writing starts from 0:00:00:00.

Es posible escribir el código de tiempos RC en una cinta grabada. Para ello, emplee el mando a distancia.
**(1)** Ajuste el interruptor POWER en PLAYER mientras pulsa el botón verde pequeño del interruptor.
**(2)** Rebobine la cinta hasta el principio y ajuste la videocámara en modo de pausa de reproducción.
**(3)** Pulse TIME CODE WRITE en el mando a distancia. El indicador TIME CODE WRITE aparecerá en el visor electrónico con el indicador WRITE parpadeando.
**(4)** Pulse ▷ o **II** para iniciar la reproducción. El indicador WRITE dejará de parpadear y se iniciará la escritura del código de tiempos RC a partir de 0:00:00:00.



### To stop writing the RC time code

Press □ (or any tape transport button).

### Para detener la escritura del código de tiempos RC

Pulse □ o cualquier botón de transporte de cinta.

### To write the RC time code from the end of the RC time code recorded portion

Rewind the tape to the portion on which the RC time code has been written and set the camcorder to playback pause mode. Then follow steps 3 and 4 above. The RC time code is written continuously.

**Notes on writing the RC time code**

- The RC time code writing stops when:
  - you press TIME CODE WRITE again before starting playback.
  - you press INDEX before starting playback.
  - you change from playback mode to another mode.
- When you are writing the RC time code from the middle of a tape without the time code written, writing starts several frames before the current picture.
- If you write the RC time code on a recorded• tape, the Data Code is erased.
- You cannot mark the RC time code on the tape that is recorded in LP mode. Though you can mark the RC time code on a tape recorded both in LP mode and SP mode, the RC time code written in LP mode, however, may not be read correctly.
- You cannot mark the RC time code on an NTSC-recorded tape.
- While the index signal is being erased, the sound cannot be heard and a black band appears at the bottom of the picture. This will not affect the recorded sound or picture.

**Note on --:--:--:-- indicator**

The --:--:--:-- indicator appears during playback if:

- nothing is recorded.
- the RC time code is unreadable because of the damage of the tape or because of the noise.
- you recorded using another VCR without RC time code function.
- you erase the index signal or make PCM after recording on another VCR in the portion on which the RC time code is written.

In this case, we recommend you to rewrite the RC time code.

### Para escribir el código de tiempos RC a partir de la parte final de grabación de dicho código

Rebobine la cinta hasta la parte en que ha escrito el código de tiempos RC y ajuste la videocámara en modo de pausa de reproducción. Después, siga los pasos 3 y 4 anteriores. El código de tiempos RC se escribirá de forma continua.

**Notas sobre la escritura del código de tiempos RC**

- El proceso de escritura de este código se detendrá si:
  - vuelve a pulsar TIME CODE WRITE antes del inicio de la reproducción.
  - pulsa INDEX antes del inicio de la reproducción.
  - cambia del modo de reproducción a otro.
- Si escribe el código de tiempos RC desde la mitad de una cinta sin dicho código, el proceso de escritura se iniciará a partir de varios fotogramas anteriores a la imagen actual.
- Si escribe el código de tiempos RC en una cinta grabada, el código de datos se borrará.
- No es posible introducir el código de tiempos RC en cintas grabadas en modo LP. Aunque es posible introducir el código de tiempos RC en una cinta grabada tanto en modo LP como SP, el código escrito en modo LP puede no leerse correctamente.
- No es posible introducir el código de tiempos RC en cintas grabadas en el sistema NTSC.
- No es posible borrar señales de índice en una cinta con la marca roja del videocassette al descubierto.

**Nota sobre el indicador --:--:--:--**

Este indicador aparece durante la reproducción si:

- no ha grabado nada.
- el código de tiempos RC es ilegible debido a que la cinta está dañada o a ruido.
- ha grabado con otra videograbadora carente de la función de código de tiempos RC.
- borra la señal de índice o emplea el modo PCM después de grabar en otra videograbadora en la parte en que ha escrito el código de tiempos RC.

En este caso, se recomienda volver a escribir el código de tiempos RC.

## Editing onto another tape

## Edición en otra cinta

You can create your own video programme by editing with any other 8 8 mm, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC or β Betamax VCR that has video/audio inputs.

Es posible crear su propio programa de vídeo mediante la edición con cualquier videograbadora 8 8 mm, Hi8 Hi8, VHS VHS, SVHS S-VHS, VHSC VHSC, SVHSC S-VHSC o β Betamax que disponga de entradas de vídeo/audio.

### Before editing

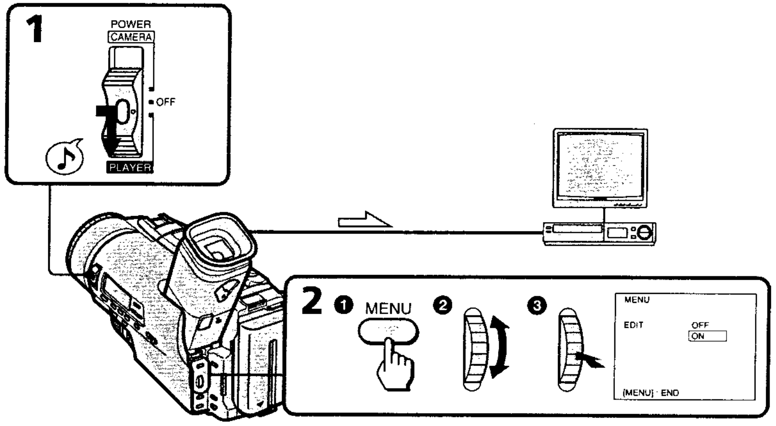
Connect the camcorder to the VCR as described in "Connections for playback" on page 21.
Set the input selector on the VCR to LINE, if available.

**(1)** While pressing the small green button on the POWER switch, set it to PLAYER.
**(2)** Set EDIT to ON in the menu system.

### Antes de editar

Conecte la videocámara a la videograbadora como se describe en el apartado "Conexiones para la reproducción" de la página 21. Ajuste el selector de entrada de la videograbadora en LINE, si se encuentra disponible.

**(1)** Ajuste el interruptor POWER en PLAYER mientras pulsa el botón verde pequeño del interruptor.
**(2)** Ajuste EDIT en ON en el sistema de menú.



⇨ : Signal flow/Flujo de señales

## Starting editing

**(1)** Insert a blank tape (or a tape you want to record over) into the VCR, and insert your recorded tape into the camcorder.
**(2)** Play back the recorded tape on the camcorder until you locate the point where you want to start editing, then press **II** to set the camcorder in playback pause mode.
**(3)** On the VCR, locate the recording start point and set the VCR in recording pause mode.
**(4)** Press **II** on the camcorder and VCR simultaneously to start editing.

### To edit more scenes

Repeat steps 2 to 4.

### To stop editing

Press □ on both the camcorder and the VCR.

**Note on the DISPLAY function**

If you have displayed the viewfinder screen indicators on the TV, erase the indicators by pressing DISPLAY on the Remote Commander so that they will not be superimposed on the edited tape.

## Inicio de la edición

**(1)** Inserte una cinta virgen (o una cinta sobre la que desee grabar) en la videograbadora, e inserte la cinta grabada en la videocámara.
**(2)** Reproduzca la cinta grabada en la videocámara hasta localizar el punto donde desee iniciar la edición; a continuación, pulse **II** para ajustar la videocámara en modo de pausa de reproducción.
**(3)** Localice en la videograbadora el punto de inicio de grabación y ajuste dicha videograbadora en modo de pausa de grabación.
**(4)** Pulse **II** en la videocámara y en la videograbadora simultáneamente para iniciar la edición.

### Para editar más escenas

Repita los pasos 2 a 4.

### Para detener la edición

Pulse □ en la videocámara y en la videograbadora.

**Nota sobre la función DISPLAY**

Si ha mostrado en el televisor los indicadores de pantalla del visor electrónico, bórrelos pulsando DISPLAY en el mando a distancia para que no se sobreimpresionen en la cinta editada.

---

**Additional Information**

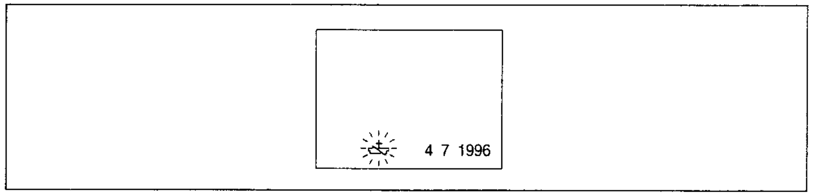
# Changing the lithium battery in the camcorder

Your camcorder is supplied with a lithium battery installed. When the battery becomes weak or dead, the indicator flashes in the viewfinder for about 5 seconds when you set the POWER switch to CAMERA. In this case, **replace the battery with a Sony CR2025 lithium battery. Use of any other battery may present a risk of fire or explosion.**
The lithium battery for the camcorder lasts for about 1 year under normal operation. (The lithium battery that comes installed at the factory may not last 1 year.)

**Información complementaria**

# Cambio de la pila de litio de la videocámara

La videocámara se suministra con una pila de litio instalada. Cuando ésta se debilite o se agote, el indicador I parpadeará en el visor electrónico durante unos 5 segundos si ajusta el interruptor POWER en CAMERA. En este caso, **sustitúyala por una pila de litio Sony CR2025. El uso de otro tipo de pila puede presentar el riesgo de incendios o explosiones.**
La duración de la pila de litio de la videocámara es de 1 año aproximadamente en condiciones normales de uso. (La pila instalada de fábrica puede no durar 1 año.)

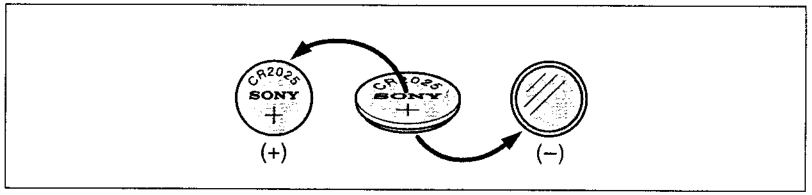


### Note on lithium battery

The lithium battery has positive (+) side and negative (–) side as illustrated. **Be sure to insert the lithium battery with the positive side facing out.**

### Nota sobre la pila de litio

Esta pila tiene una cara positiva (+) y otra negativa (–) como muestra la ilustración. **Asegúrese de insertarla con la cara positiva hacia fuera.**



**WARNING**

The battery may explode if mistreated. Do not recharge, disassemble, or dispose of in fire.

**Caution**

**Keep the lithium battery out of the reach of children. Should the battery be swallowed, consult a doctor immediately.**

**AVISO**

La pila puede explotar en caso de uso incorrecto. No la recargue, desmonte ni la arroje al fuego.

**Precaución**

**Mantenga la pila de litio fuera del alcance de los niños. En caso de ingestión, póngase inmediatamente en contacto con un médico.**

### Changing the lithium battery

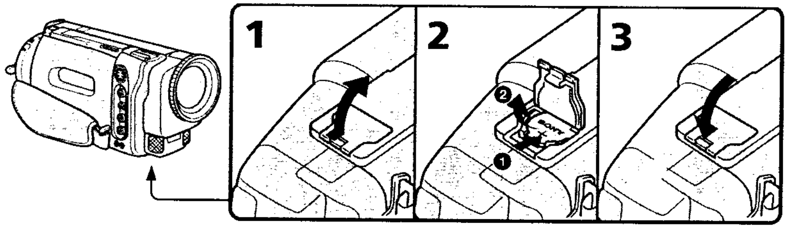
When replacing the lithium battery, keep the battery pack or other power source attached. Otherwise, you will need to reset the date, time and other items in the menu system retained by the lithium battery.

**(1)** Open the lid of the lithium battery compartment.
**(2)** Push the battery down once and pull it out from the holder.
**(3)** Install the lithium battery with the positive (+) side facing out. Close the lid.

### Sustitución de la pila de litio

Al sustituir la pila, mantenga conectado el paquete de batería u otra fuente de alimentación. En caso contrario, será necesario volver a ajustar en el sistema de menú la fecha, hora y otros elementos que se mantienen gracias a la pila de litio.

**(1)** Abra la tapa del compartimiento de la pila de litio.
**(2)** Presione hacia abajo la pila una vez y sáquela del portapila.
**(3)** Instale la pila de litio con la cara positiva (+) hacia fuera. Cierre la tapa.



## Resetting the date and time

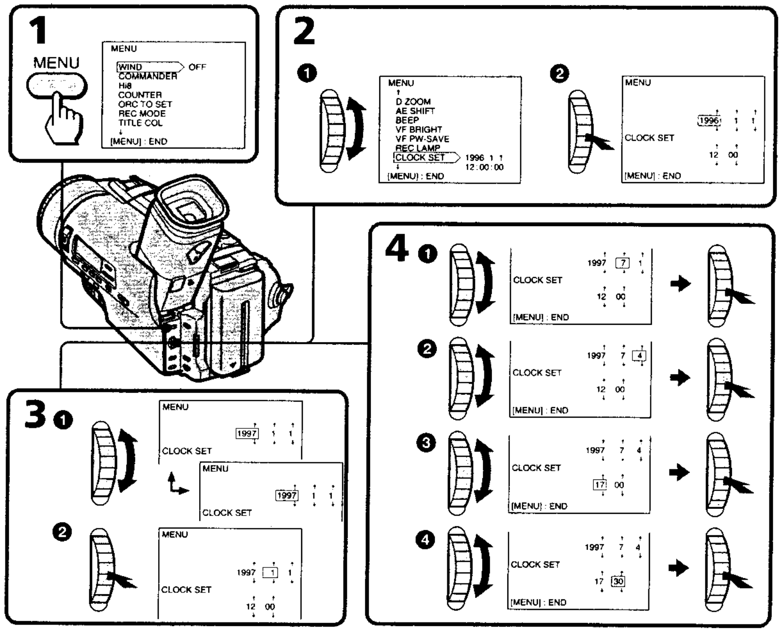
You can set the date and time in the menu system.

**(1)** Press MENU to display the menu in the viewfinder.
**(2)** Turn the control dial to highlight CLOCK SET, and press the control dial to select it.
**(3)** Turn the control dial to adjust the year, and then press the control dial.
**(4)** Set the month, day, hour, and minutes by turning the control dial and then pressing the control dial.
**(5)** Press MENU to erase the menu display.

## Reajuste de la fecha y hora

Es posible ajustar la fecha y la hora en el sistema de menú.

**(1)** Pulse MENU para visualizar el menú en el visor electrónico.
**(2)** Gire el dial de control para resaltar CLOCK SET, y púlselo para seleccionarlo.
**(3)** Gire el dial de control para ajustar el año y, a continuación, púlselo.
**(4)** Ajuste el mes, día, hora y minutos girando el dial de control y, a continuación, pulsándolo.
**(5)** Pulse MENU para que desaparezca el menú.


1
MENU
MENU
WIND OFF
COMMANDER
Hi8
COUNTER
ORC TO SET
REC MODE
TITLE COL
[MENU] : END
2
❶
MENU
D ZOOM
AE SHIFT
BEEP
VF BRIGHT
VF PW-SAVE
REC LAMP
CLOCK SET 1996 1 1
12:00:00
[MENU] : END
❷
MENU
CLOCK SET 1996 1 1
12 00
[MENU] : END
3 ❶
MENU
CLOCK SET 1997 1 1
❷
CLOCK SET 1997 1 1
12 00
4 ❶
CLOCK SET 1997 7 1
12 00
[MENU] : END
❷
CLOCK SET 1997 7 4
12 00
❸
CLOCK SET 1997 7 4
17 00
❹
CLOCK SET 1997 7 4
17 30
[MENU] : END

### To correct the date and time setting

Repeat the above procedure.

### Para corregir el ajuste de fecha y hora

Repita el procedimiento anterior.

### To check the preset date and time

Press DATE to display the date indicator in the viewfinder.
Press TIME to display the time indicator.
When you press the same button again, the indicator goes off.

**The year indicator changes as follows:**

1996 ←→ 1997 ←— ···· —→ 2029

**Note on the time indicator**

The internal clock of this camcorder operates on a 24-hour cycle.

### Para comprobar la fecha y hora predefinidas

Pulse DATE para que aparezca el indicador de fecha en el visor electrónico.
Pulse TIME para que aparezca el indicador de hora.
Si vuelve a pulsar el mismo botón, el indicador se desactivará.

**El indicador de año cambia de la siguiente forma:**

1996 ←→ 1997 ←— ···· —→ 2029

**Nota sobre el indicador de hora**

El reloj interno de esta videocámara emplea el ciclo de 24 horas.

## Usable cassettes and playback modes

### Selecting cassette types

This Hi8 system is an extension of the standard 8 mm system, and was developed for higher-quality pictures.
You can use Hi8 video and standard 8 mm cassettes. When you want to record in the Hi8 system, use only Hi8 video cassettes. You cannot record on standard 8 mm cassettes in the Hi8 system.
If you are going to play back the tape using a standard 8 mm video recorder/player, you should record the tape on a standard 8 mm system.
If you want to use a Hi8 cassette with the standard 8 mm video recorder system, set Hi8 to OFF in the menu system before recording.

| To play back in | Record using cassette type | Set Hi8 setting to |
|---|---|---|
| Hi8 | Hi8 | AUTO |
| Standard 8 | Hi8 | OFF |
| | 8 | AUTO<br>(or OFF) |

## Videocassettes utilizables y modos de reproducción

### Selección de los tipos de videocassette

Este sistema Hi8 se ha desarrollado a partir del sistema de 8 mm estándar para proporcionar imágenes de calidad superior.
Es posible emplear videocassettes Hi8 y de 8 mm estándar. Si desea grabar en el sistema Hi8, utilice sólo videocassettes Hi8. No es posible grabar en videocassettes de 8 mm estándar en el sistema Hi8.
Si va a reproducir la cinta en una videograbadora/reproductora de 8 mm estándar, deberá grabar dicha cinta en un sistema de 8 mm estándar.
Si desea utilizar un videocassette Hi8 con el sistema de videograbadora de 8 mm estándar, ajuste Hi8 en OFF en el sistema de menú antes de realizar la grabación.

| Para reproducir en | Grabe con un videocassette de tipo | Realice el ajuste de Hi8 en |
|---|---|---|
| Hi8 | Hi8 | AUTO |
| 8 estándar | Hi8 | OFF |
| | 8 | AUTO<br>(u OFF) |

### When you play back

The playback mode (SP/LP or Hi8/standard 8 mm) is selected automatically according to the format in which the tape has been recorded. The quality of the recorded picture in LP mode, however, will not be as good as that in SP mode.

### Note on AFM HiFi stereo

When you play back a tape, the sound will be in monaural if:

- You record the tape using this camcorder, then play it back on an AFM HiFi monaural video recorder/player.
- You record the tape on an AFM HiFi monaural video recorder, then play it back on this camcorder.

### Recording mode

When you play back a tape, the SP/LP indicator in the viewfinder shows the recording mode LP/SP.

### Foreign 8 mm video

Because the TV colour systems differ from country to country, you may not be able to play back foreign pre-recorded tapes. Refer to the list of "Using your camcorder abroad" to check the TV colour system of foreign countries.

**Playing back an NTSC-recorded tape**

You can play back tapes recorded in the NTSC video system using the SP mode on the viewfinder of this camcorder. If the tape is recorded in the AFM HiFi system, the AFM HiFi sound is reproduced. However, note that the following will occur during playback of an NTSC-recorded tape.

- When playing back a tape on a TV screen, you may not get the original colour depending on the TV.
- You cannot play back a tape recorded in NTSC video system with LP mode neither on the viewfinder nor on a TV screen.
- If a tape has portions recorded in PAL and NTSC video systems, the tape counter reading is not correct. This discrepancy is due to the difference between the counting cycle of the two video systems.
- You cannot edit the NTSC-recorded tape onto another VCR.
- When you play back on a Multi System TV, set NTSC PB to the desired mode in the menu system.

### Al reproducir

El modo de reproducción (SP/LP o Hi8/8 mm estándar) se selecciona automáticamente en función del formato de grabación de la cinta. La calidad de las imágenes grabadas en modo LP no será tan buena como en modo SP.

### Nota sobre el sistema estéreo AFM HiFi

Al reproducir una cinta, el sonido será monofónico si:

- Graba la cinta en esta videocámara y después la reproduce en una videograbadora/reproductora monofónica AFM HiFi.
- Graba la cinta en una videograbadora monofónica AFM HiFi y después la reproduce en esta videocámara.

### Modo de grabación

Al reproducir una cinta, el indicador SP/LP del visor electrónico muestra el modo de grabación LP/SP.

### Videocassettes de 8 mm extranjeros

Debido a que los sistemas de televisión en color varían en función del país, es posible que no pueda reproducir cintas extranjeras previamente grabadas. Consulte la lista que aparece en el apartado "Uso de la videocámara en el extranjero" para ver el sistema de televisión en color de otros países.

**Reproducción de cintas grabadas en el sistema NTSC**

Es posible reproducir cintas grabadas en el sistema de vídeo NTSC con el modo SP en el visor electrónico de esta videocámara. Si la cinta se ha grabado en el sistema AFM HiFi, se reproducirá el sonido AFM HiFi. No obstante, tenga en cuenta que durante la reproducción de cintas grabadas en el sistema NTSC se producirá lo siguiente:

- Si reproduce cintas en la pantalla del televisor, es posible que no obtenga el color original en función del televisor.
- No es posible reproducir cintas grabadas en el sistema de vídeo NTSC con el modo LP ni en el visor electrónico ni en la pantalla del televisor.
- Si la cinta presenta partes grabadas en los sistemas de vídeo PAL y NTSC, la lectura del contador de cinta no será correcta. Esta incorrección se debe a la diferencia entre el ciclo de conteo de los dos sistemas de vídeo.
- No es posible editar la cinta grabada en el sistema NTSC en otra videograbadora.
- Si realiza la reproducción en un televisor de sistema múltiple, ajuste NTSC PB en el sistema de menú en el modo que desee.

# Tips for using the battery pack

This section shows you how you can get the most out of your battery pack.

## Preparing the battery pack

### Always carry additional batteries

Have sufficient battery pack power to do 2 to 3 times as much recording as you have planned.

### Battery life is shorter in a cold environment

Battery efficiency is decreased, and the battery will be used up more quickly, if you are recording in a cold environment.

### To save battery power

Turn STANDBY down when not recording to save battery power.
A smooth transition between scenes can be made even if recording is stopped and started again. While you are positioning the subject, selecting an angle, or looking through the viewfinder lens, the lens moves automatically and the battery is used. The battery is also used when a tape is inserted or removed.

## When to replace the battery pack

While you are using your camcorder, the remaining battery indicator in the viewfinder decreases gradually as battery power is used up. When you use the NP-F530/F730 "InfoLIHTIUM" battery, the minute indicators appear with the remaining battery indicator while recording.

# Consejos para el uso del paquete de batería

En esta sección se describe cómo obtener el máximo rendimiento del paquete de batería.

## Preparación del paquete de batería

### Tenga siempre a disposición pilas adicionales

Tenga a disposición suficientes pilas como para poder alimentar la videocámara el doble o el triple del tiempo planeado.

### La duración del paquete se reduce en ambientes fríos

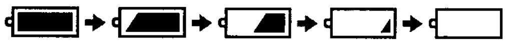
La eficacia del paquete disminuirá y se agotará con mayor rapidez, cuando grabe en ambientes fríos.

### Para ahorrar energía del paquete

Gire STANDBY hacia abajo cuando no grabe con el fin de ahorrar la energía del paquete.
Es posible obtener una transición uniforme entre escenas aunque detenga y vuelva a iniciar la grabación. Mientras sitúa el objeto, selecciona un ángulo o mira por el objetivo del visor electrónico, dicho objetivo se desplaza automáticamente, con lo que utiliza la energía del paquete. Este también se emplea al insertar o expulsar una cinta.

## Cuándo sustituir el paquete de batería

Mientras emplea la videocámara, el indicador de batería restante del visor electrónico disminuye gradualmente a medida que se agota el paquete. Cuando utilice la pila NP-F530/F730 "InfoLIHTIUM", los indicadores de los minutos aparecen junto con el indicador de batería restante durante la grabación.



# Tips for using the battery pack

When the remaining battery indicator reaches the lowest point, the ▭ indicator appears and starts flashing in the viewfinder. When you use the NP-F530/F730 battery, the ▭ indicator may flash even if there are still 5 to 10 minutes of charge remaining.
When the ▭ indicator in the viewfinder changes from slow flashing to rapid flashing while you are recording, set the POWER switch to OFF on the camcorder and replace the battery pack. Leave the tape in the camcorder to obtain a smooth transition between scenes after the battery pack has been replaced.

## Notes on the rechargeable battery pack

### Caution

Never leave the battery pack in temperatures above 60°C (140°F), such as in a car parked in the sun or under direct sunlight.

### The battery pack heats up

During charging or recording, the battery pack heats up. This is caused by energy that has been generated and a chemical change that has occurred inside the battery pack. This is not cause for concern, and is normal.

### About ⓘ InfoLITHIUM batteries

The InfoLITHIUM is a lithium ion battery pack which can exchange data with compatible video equipment about its battery consumption. Sony recommends that you use the InfoLITHIUM battery pack with video equipment having the ⓘ InfoLITHIUM mark.

When you use this battery pack with video equipment having the ⓘ InfoLITHIUM mark, the video equipment will indicate the remaining battery time in minutes*. However, if you use it with video equipment not having this mark, the remaining battery capacity will not be indicated in minutes.

* The indication may not be accurate depending on the condition and environment which the equipment is used under. If the indication is not accurate, use the battery pack completely and then charge it fully. The indication will become accurate. However, the indication may not become accurate if you use or leave the battery pack in a warm place for a long time, or after you have used the battery pack many times.

# Consejos para el uso del paquete de batería

Cuando el indicador de batería restante alcance el punto más bajo, aparecerá el indicador ▭ y comenzará a parpadear en el visor electrónico. Si utiliza la pila NP-F530/F730, es posible que el indicador ▭ parpadee aunque haya una carga restante de 5 a 10 minutos.
Si el parpadeo del indicador ▭ del visor electrónico pasa de lento a rápido durante la grabación, ajuste el interruptor POWER de la videocámara en OFF y sustituya el paquete de batería. Deje la cinta en la videocámara para obtener una transición uniforme entre escenas después de haber sustituido el paquete de batería.

## Notas sobre el paquete de batería recargable

### Precaución

No exponga nunca el paquete a temperaturas superiores a 60°C (140°F), como en un automóvil aparcado al sol o bajo la luz solar directa.

### Calentamiento del paquete de batería

Durante los procesos de carga y grabación, el paquete de batería se calienta. Esto se debe a la energía generada y a cambios químicos producidos en el interior del paquete. Esto no es motivo de preocupación, ya que es normal.

### Paquete de batería ⓘ InfoLITHIUM

InfoLITHIUM es un paquete de batería de ion de litio que puede intercambiar datos con equipos de vídeo compatibles sobre su consumo de energía. Sony recomienda el uso de paquetes de batería InfoLITHIUM con equipos de vídeo que presenten la marca ⓘ InfoLITHIUM.

Cuando emplee este paquete de batería con un equipo de vídeo que presente la marca ⓘ InfoLITHIUM, éste indicará el tiempo restante de energía en minutos*. No obstante, si lo utiliza con un equipo de vídeo que no presente dicha marca, la capacidad de energía restante no se indicará en minutos.

* La indicación puede no mostrarse con precisión en función de la condición y del entorno en los que emplee el equipo. Si la indicación no se muestra con precisión, agote el paquete de batería y, a continuación, cárguelo por completo; de esta forma, dicha indicación será precisa. Sin embargo, es posible que la indicación no llegue a mostrarse con precisión si emplea o deja el paquete de batería en un lugar cálido durante mucho tiempo, o después de haberlo utilizado muchas veces.

### Battery pack care

- **Remove the battery pack from the camcorder after using it,** and keep it in a cool place. When the battery pack is installed to the camcorder, a small amount of current flows to the camcorder even if the POWER switch is set to OFF. This shortens battery life.
- The battery pack is always discharging even when it is not in use after charging. Therefore, you should charge the battery pack right before using the camcorder.

### The switch on the battery pack

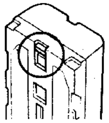
This switch is provided so that you can mark the charged battery pack. Set the switch to the "green mark" position when charging is completed. (When removed from the charging adaptor, the switch exposes the green mark. When removed from your camcorder, no mark is indicated.)

### Cuidados del paquete de batería

- Extraiga el paquete de la videocámara después de usarlo y guárdelo en un lugar fresco. Mientras el paquete está instalado en la videocámara, una pequeña cantidad de corriente fluye hacia ésta aunque el interruptor POWER esté ajustado en OFF. Esto reduce la duración del paquete.
- El paquete de batería siempre se descargará aunque no lo utilice después de haberlo cargado. Por tanto, debe cargarse inmediatamente antes de emplear la videocámara.

### Interruptor del paquete de batería

Este interruptor posibilita marcar el paquete de batería cargado. Ajuste el interruptor en la posición de la "marca verde" una vez finalizado el proceso de carga. (Al retirarse del adaptador de carga, el interruptor muestra la marca verde, mientras que al retirarse de la videocámara no muestra ninguna marca.)



### The life of the battery pack

If the battery indicator flashes rapidly just after turning on the camcorder with a fully charged battery pack, the battery pack should be replaced with a new fully charged one.

### Charging temperature

You should charge batteries at temperatures from 10°C to 30°C (from 50°F to 86°F). Lower temperatures require a longer charging time.

## Notes on charging

### A brand-new battery pack

A brand-new battery pack is not charged. Before using the battery pack, charge it completely.

### Recharge the battery pack whenever you like

You do not have to discharge it before recharging. If you charged the battery pack fully but you did not use it for a long time, it becomes discharged. Then recharge the battery pack before use.

### Duración del paquete de batería

Si el indicador de batería parpadea rápidamente inmediatamente después de encender la videocámara provista de un paquete de batería completamente cargado, éste deberá sustituirse por otro nuevo completamente cargado.

### Temperatura de carga

El paquete debe cargarse a temperaturas comprendidas entre 10°C y 30°C (50°F a 86°F). Las temperaturas bajas requieren un tiempo de carga superior.

## Notas sobre la carga

### Paquetes de batería nuevos

Los paquetes de baterías nuevos no están cargados. Antes de emplearlos, es necesario cargarlos por completo.

### Recargue el paquete de batería cuando desee

No es preciso descargarlo antes de recargarlo. El paquete se descargará si lo ha cargado por completo pero no lo ha utilizado durante un largo período de tiempo. En este caso, recárguelo antes de usarlo.

# Tips for using the battery pack

## Notes on the terminals

**If the terminals (metal parts on the back) are not clean, the battery charge duration will be shortened.**
When the terminals are not clean or when the battery pack has not been used for a long time, repeatedly install and remove the battery pack a few times. This improves the contact condition. Do not put any foreign objects such as dust or sand in the ⊕ and ⊖ terminals.

### Be sure to observe the following

- Keep the battery pack away from fire.
- Keep the battery pack dry.
- Do not open nor try to disassemble the battery pack.
- Do not expose the battery pack to any mechanical shock.

## Notes on the battery case

- **Use only with alkaline batteries. You cannot use the battery case with manganese batteries or LR6 (size AA) rechargeable NiCd batteries.**
- **Using with Sony alkaline batteries is preferable.**
- Battery life is remarkably shorter in a cold environment (lower than 10°C/50°F).
- Keep the metal part clean. If it gets dirty, wipe it with a soft cloth.
- Do not disassemble or try to disassemble the battery case.
- Do not expose the battery case to any mechanical shock.
- During recording, the battery case heats up. This is not cause for concern.
- Prevent the electrode in the battery case from coming in contact with a metal object.
- If you will not use the battery case for a long time, detach the battery case from the camcorder and remove the batteries from the battery case.

# Consejos para el uso del paquete de batería

## Notas sobre los terminales

**Si los terminales (componentes metálicos situados en la parte trasera) no están limpios, la duración de la carga se reducirá.**
Si los terminales no están limpios o si no ha utilizado el paquete de batería durante mucho tiempo, instálelo y extráigalo varias veces. De esta forma mejorará la condición de contacto. No coloque ningún objeto extraño como polvo o arena en los terminales ⊕ y ⊖.

### Asegúrese de tener en cuenta lo siguiente:

- Mantenga el paquete de batería alejado del fuego.
- Manténgalo seco.
- No lo abra ni lo desmonte.
- No lo exponga a golpes mecánicos.

## Notas sobre el estuche de pilas

- **Empléelo sólo con pilas alcalinas. No es posible utilizar el estuche con pilas de manganeso ni con pilas recargables de níquel-cadmio tipo LR6 (tamaño AA).**
- **Utilice preferiblemente pilas alcalinas Sony.**
- La duración de las pilas se reduce notablemente en ambientes fríos (temperaturas inferiores a 10°C/50°F).
- Mantenga limpio el componente metálico. Si se ensucia, límpielo con un paño suave.
- No intente desmontar el estuche de pilas.
- No exponga el estuche de pilas a golpes mecánicos.
- Durante la grabación, el paquete de pilas se calienta. Esto es normal.
- Evite que el electrodo del estuche de pilas entre en contacto con objetos metálicos.
- Si no va a utilizar el estuche durante mucho tiempo, extráigalo de la videocámara y retire las pilas del mismo.

### Notes on alkaline batteries

To avoid possible damage from battery leakage or corrosion, observe the following.

- Be sure to insert the batteries in the correct direction.
- Alkaline batteries are not rechargeable.
- Do not use a combination of new and old batteries.
- Do not use different types of batteries.
- The batteries slowly discharge while not in use.
- Do not use a battery that is leaking.

**If battery leakage occurred**

- Wipe off the liquid in the battery case carefully before replacing the batteries.
- If you touch the liquid, wash it off with water.
- If the liquid get into your eyes, wash your eyes with a lot of water and then consult a doctor.

### Notas sobre las pilas alcalinas

Para evitar posibles daños producidos por fugas o corrosión, tenga en cuenta lo siguiente:

- Asegúrese de insertar las pilas en el sentido correcto.
- Las pilas alcalinas no son recargables.
- No emplee pilas nuevas junto con viejas.
- No emplee diferentes tipos de pilas.
- Las pilas se descargan lentamente cuando no las utilice.
- No emplee pilas que presenten fugas.

**Si se producen fugas**

- Limpie cuidadosamente el líquido del estuche de pilas antes de insertar las pilas.
- Si toca el líquido, límpieselo con agua.
- Si el líquido entra en contacto con los ojos, límpieselos con abundante agua y consulte con un médico.

# Maintenance information and precautions

# Información y precauciones sobre mantenimiento

## Moisture condensation

If the camcorder is brought directly from a cold place to a warm place, moisture may condense inside the camcorder, on the surface of the tape, or on the lens. In this condition, the tape may stick to the head drum and be damaged or the unit may not operate correctly. To prevent possible damage under these circumstances, the camcorder is furnished with moisture sensors. Please, take the following precautions.

### Inside the camcorder

If there is moisture inside the camcorder, the beep sounds and the 💧 indicator flashes. If this happens, none of the functions except cassette ejection will work. Open the cassette compartment, turn off the camcorder, and leave it about 1 hour. When ⏏ indicator flashes at the same time, the cassette is inserted in the camcorder. Eject the cassette, turn off the camcorder, and leave also the cassette about 1 hour.

## Condensación de humedad

Si traslada la videocámara directamente de un lugar frío a otro cálido, es posible que se condense humedad en su interior, en la superficie de la cinta o sobre el objetivo. En este caso, la cinta puede adherirse al tambor del cabezal y dañarse o la unidad puede no funcionar correctamente. Para evitar posibles daños en estas circunstancias, la videocámara está equipada con sensores de humedad. Tome las siguientes precauciones.

### Interior de la videocámara

Si se condensa humedad en el interior de la videocámara, la unidad emitirá un pitido y el indicador 💧 parpadeará. Si esto ocurre, ninguna de las funciones se activará, excepto la de expulsión de videocassettes. Abra el compartimiento de videocassettes, apague la videocámara y no la utilice durante 1 hora aproximadamente. Si el indicador ⏏ también parpadea, significa que hay un videocassette insertado en la videocámara. Expúlselo, apague la videocámara y tampoco utilice el videocassette durante 1 hora aproximadamente.

### On the lens

If moisture condenses on the lens, no indicator appears, but the picture becomes dim. Turn off the power and do not use the camcorder for about 1 hour.

### How to prevent moisture condensation

When bringing the camcorder from a cold place to a warm place, put the camcorder in a plastic bag and allow it to adapt to room conditions over a period of time.

**(1)** Be sure to tightly seal the plastic bag containing the camcorder.

**(2)** Remove the bag when the air temperature inside it has reached the temperature surrounding it (after about 1 hour).

## Video head cleaning

To ensure normal recording and clear pictures, clean the video heads. When the ⊗ indicator and "📼 CLEANING CASSETTE" message appear one after another in the viewfinder or playback pictures are "noisy" or hardly visible, the video heads may be dirty.

### Sobre el objetivo

Si se condensa humedad en el objetivo, no aparecerá ningún indicador y la imagen se atenuará. Desactive la alimentación y no emplee la videocámara durante 1 hora aproximadamente.

### Cómo evitar la condensación de humedad

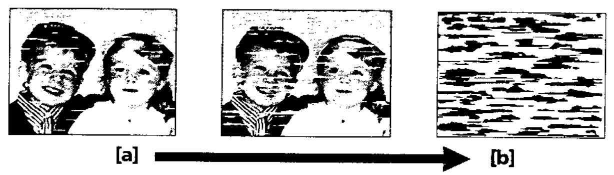
Cuando traslade la videocámara de un lugar frío a otro cálido, introdúzcala en una bolsa de plástico y deje que se adapte a las condiciones de la sala durante algún tiempo.

**(1)** Asegúrese de cerrar herméticamente la bolsa de plástico.

**(2)** Retire la bolsa cuando la temperatura de su interior haya alcanzado la temperatura que la rodea (después de aproximadamente 1 hora).

## Limpieza de los cabezales de vídeo

Para garantizar grabaciones normales e imágenes nítidas, limpie los cabezales de vídeo. Si el indicador ⊗ y el mensaje "📼 CLEANING CASSETTE" aparecen uno detrás del otro en el visor electrónico o si las imágenes de reproducción presentan "ruido" o apenas pueden verse, es posible que los cabezales de vídeo estén sucios.



**[a]** Slightly dirty
**[b]** Very dirty

If this happens, clean the video heads with the Sony V8-25CLH cleaning cassette (not supplied). After checking the picture, if it is still "noisy," repeat the cleaning. (Do not repeat cleaning more than 5 times in one session.)

**[a]** Ligeramente sucios
**[b]** Muy sucios

Si esto ocurre, limpie los cabezales de vídeo con el cassette limpiador V8-25CLH de Sony (no suministrado). Si la imagen presenta "ruido" después de comprobarla, repita la limpieza. (No realice la limpieza más de 5 veces en una misma sesión.)

**Caution**
Do not use a commercially available wet-type cleaning cassette. It may damage the video heads.

**Note**
If the V8-25CLH cleaning cassette is not available in your area, consult your nearest Sony dealer.

### Removing dust from inside the viewfinder (CCD-TR2200E only)

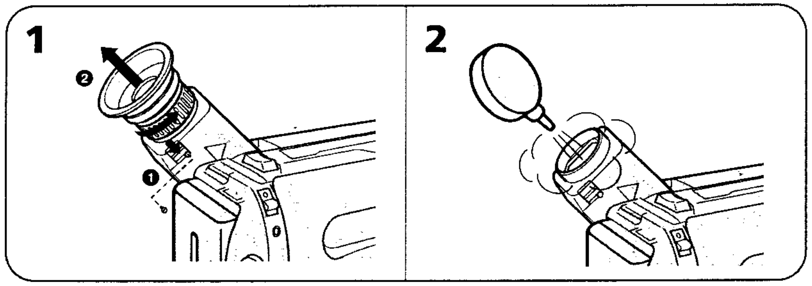
**(1)** Remove the screw with a screwdriver (not supplied). Then, while sliding the RELEASE knob, turn the eyecup in the direction of the arrow and pull it out.
**(2)** Clean the surface with a commercially available blower.

**Precaución**
No utilice cassettes limpiadores de tipo húmedo disponibles en las tiendas del ramo, ya que pueden dañar los cabezales de vídeo.

**Nota**
Si el cassette limpiador V8-25CLH no se encuentra disponible en su zona, póngase en contacto con el proveedor Sony más próximo.

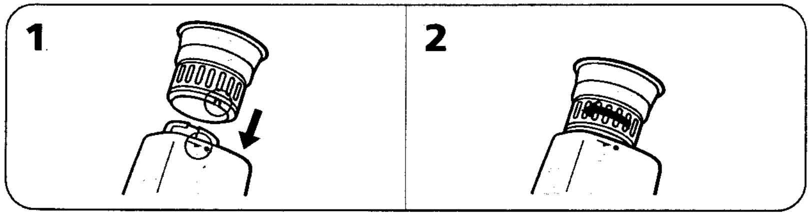
### Eliminación del polvo del interior de la videocámara (sólo CCD-TR2200E)

**(1)** Extraiga el tornillo con un destornillador (no suministrado). A continuación, mientras desliza el mando RELEASE, gire el ocular en la dirección de la flecha y sáquelo.
**(2)** Limpie la superficie con un soplador disponible en las tiendas del ramo.



**To reattach the eyecup**
**(1)** Align the groove on the eyecup with the • mark on the barrel.
**(2)** Turn the eyecup in the direction of the arrow. Then replace the screw.

**Para volver a fijar el ocular**
**(1)** Alinee la ranura del ocular con la marca • del cilindro.
**(2)** Gire el ocular en la dirección de la flecha y, a continuación, vuelva a colocar el tornillo.



## Maintenance information and precautions

## Información y precauciones sobre mantenimiento

### Precautions

**Camcorder operation**
- Operate the camcorder on 7.2 V (battery pack) or 8.4 V (AC power adaptor).
- For DC or AC operation, use the accessories recommended in this manual.
- Should any solid object or liquid get inside the casing, unplug the camcorder and have it checked by a Sony dealer before operating it any further.
- Avoid rough handling or mechanical shock. Be particularly careful of the lens.
- Keep the POWER switch set to OFF when not using the camcorder.
- Do not wrap up the camcorder and operate it since heat may build up internally.
- Keep the camcorder away from strong magnetic fields or mechanical vibration.

**On handling tapes**
Do not insert anything in the small holes on the rear of the cassette. These holes are used to sense the type of tape, thickness of tape and if the recording tab is in or out.

**Camcorder care**
- When the camcorder is not to be used for a long time, disconnect the power source and remove the tape. Periodically turn on the power, operate the camera and player sections and play back a tape for about 3 minutes.
- Clean the lens with a soft brush to remove dust. If there are fingerprints on it, remove them with a soft cloth.
- Clean the camcorder body with a dry soft cloth, or a soft cloth lightly moistened with a mild detergent solution. Do not use any type of solvent which may damage the finish.

### Precauciones

**Empleo de la videocámara**
- Alimente la videocámara con 7,2 V (paquete de batería) o con 8,4 V (adaptador de alimentación de CA).
- Para el funcionamiento con CC o CA, emplee los accesorios recomendados en este manual.
- Si cae algún objeto sólido o se introduce líquido en la unidad, desenchúfela y haga que un proveedor Sony la revise antes de volver a utilizarla.
- No la emplee con brusquedad y evite los golpes mecánicos. Tenga especial cuidado con el objetivo.
- Mantenga el interruptor POWER ajustado en OFF cuando no utilice la videocámara.
- No cubra la videocámara cuando la utilice, ya que puede recalentarse internamente.
- Mantenga la videocámara alejada de campos magnéticos intensos y de vibraciones mecánicas.

**Manejo de las cintas**
No inserte nada en los orificios pequeños situados en la parte posterior del videocassette, ya que estos orificios se emplean para detectar el tipo de cinta, su grosor y si la lengüeta de grabación se encuentra dentro o fuera.

**Cuidados de la videocámara**
- Si no va a utilizar la videocámara durante un largo período de tiempo, desconecte la fuente de alimentación y extraiga la cinta. Active la alimentación periódicamente, emplee las secciones de cámara y de reproductor y reproduzca una cinta durante unos 3 minutos.
- Limpie el objetivo con un cepillo suave para eliminar el polvo. Si hay huellas dactilares en dicho objetivo, elimínelas con un paño suave.
- Limpie el exterior de la videocámara con un paño seco y suave, o bien ligeramente humedecido con una solución detergente poco concentrada. No utilice ningún tipo de disolventes, ya que pueden dañar el acabado.

### AC power adaptor

**Charging**

- Use only a lithium ion type battery pack.
- Place the battery pack on a flat surface without vibration during charging.
- The battery pack will get hot during charging. This is normal.

**Others**

- Unplug the unit from the mains when not in use for a long time. To disconnect the mains lead, pull it out by the plug. Never pull the mains lead itself.
- Do not operate the unit with a damaged cord or if the unit has been dropped or damaged.
- Do not bend the AC mains lead forcibly, or put a heavy object on it. This will damage the cord and may cause a fire or electrical shock.
- Be sure that nothing metallic comes into contact with the metal parts of the connecting plate. If this happens, a short may occur and the unit may be damaged.
- Always keep the metal contacts clean.
- Do not disassemble the unit.
- Do not apply mechanical shock or drop the unit.
- While the unit is in use, particularly during charging, keep it away from AM receivers and video equipment because it will disturb AM reception and video operation.
- The unit becomes warm while in use. This is normal.
- Do not place the unit in locations that are:
  - Extremely hot or cold
  - Dusty or dirty
  - Very humid
  - Vibrating

If any difficulty should arise, unplug the unit and contact your nearest Sony dealer.

### Adaptador de alimentación de CA

**Carga**

- Emplee únicamente paquetes de batería de tipo ion de litio.
- Durante el proceso de carga, sitúe el paquete de batería sobre una superficie plana sin vibraciones.
- El paquete de batería se calentará durante el proceso de carga. Esto es normal.

**Otros**

- Desenchufe la unidad de la toma de corriente si no la va a utilizar durante un largo período de tiempo. Para desconectar el cable de alimentación, tire del enchufe, nunca del propio cable.
- No emplee la unidad si ésta se ha caído o está dañada; tampoco la utilice con un cable dañado.
- No doble a la fuerza el cable de alimentación de CA, ni sitúe objetos pesados sobre él, ya que si lo hace el cable se dañará y puede causar incendios o descargas eléctricas.
- Asegúrese de que ningún objeto metálico entre en contacto con los componentes metálicos de la placa de conexión. Si esto ocurre, puede producirse un cortocircuito y dañarse la unidad.
- Mantenga siempre limpios los contactos metálicos.
- No desmonte la unidad.
- No aplique golpes mecánicos ni deje caer la unidad.
- Mientras emplee la unidad, particularmente durante el proceso de carga, manténgala alejada de receptores de AM y de equipos de vídeo, ya que producirá interferencias en la recepción de AM y en el funcionamiento del vídeo.
- La unidad se calienta durante el uso. Esto es normal.
- No sitúe la unidad en lugares:
  - Extremadamente cálidos o fríos
  - Polvorientos o sucios
  - Muy húmedos
  - Con vibraciones

Si surge cualquier dificultad, desenchufe la unidad y póngase en contacto con el proveedor Sony más próximo.

## Using your camcorder abroad

Each country has its own electric and TV colour systems. Before using your camcorder abroad, check the following points.

### Power sources

You can use your camcorder in any country with the supplied AC power adaptor within 110 V to 240 V AC, 50/60 Hz.

### Difference in colour systems

This camcorder is a PAL system-based camcorder. If you want to view the playback picture on a TV, it must be a PAL system-based TV.
Check the following list.

**PAL system countries**
Australia, Austria, Belgium, China, Denmark, Finland, Germany, Great Britain, Holland, Hong Kong, Italy, Kuwait, Malaysia, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, Thailand, etc.

**PAL-M system country**
Brazil

**PAL-N system countries**
Argentina, Paraguay, Uruguay

**NTSC system countries**
Bahama Islands, Bolivia, Canada, Central America, Chile, Colombia, Ecuador, Jamaica, Japan, Korea, Mexico, Peru, Surinam, Taiwan, the Philippines, the U.S.A., Venezuela, etc.

**SECAM system countries**
Bulgaria, Czech Republic, France, Guyana, Hungary, Iran, Iraq, Monaco, Poland, Russia, Slovak Republic, Ukraine, etc.

## Uso de la videocámara en el extranjero

Cada país dispone de sus propios sistemas de televisión en color y de electricidad. Antes de usar la videocámara en el extranjero, compruebe los puntos mencionados a continuación.

### Fuentes de alimentación

Puede emplear la videocámara en cualquier país con el adaptador de alimentación de CA suministrado dentro del margen de 110 V a 240 V CA, 50/60 Hz.

### Diferencias entre sistemas de color

Esta videocámara está basada en el sistema PAL. Si desea visualizar la imagen de reproducción en un televisor, éste debe estar basado en el sistema PAL.
Consulte la siguiente lista:

**Países con sistema PAL**
Australia, Austria, Bélgica, China, Dinamarca, Finlandia, Alemania, Gran Bretaña, Holanda, Hong Kong, Italia, Kuwait, Malasia, Nueva Zelanda, Noruega, Portugal, Singapur, España, Suecia, Suiza, Tailandia, etc.

**País con sistema PAL-M**
Brasil

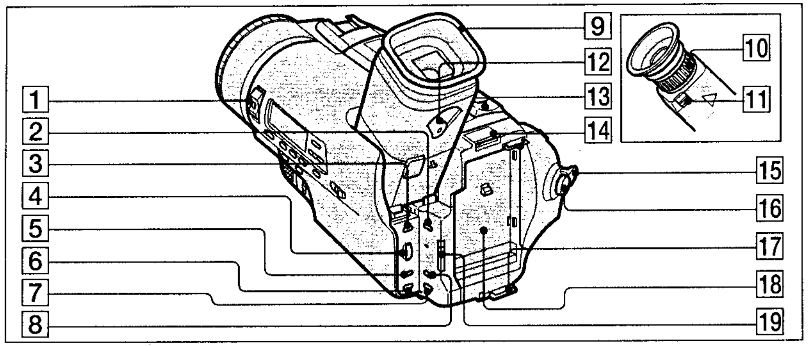
**Países con sistema PAL-N**
Argentina, Paraguay, Uruguay

**Países con sistema NTSC**
Islas Bahamas, Bolivia, Canadá, Centroamérica, Chile, Colombia, Ecuador, Jamaica, Japón, Corea, Méjico, Perú, Surinám, Taiwan, Islas Filipinas, Estados Unidos, Venezuela, etc.

**Países con sistema SECAM**
Bulgaria, República Checa, Francia, Guayana, Hungría, Irán, Iraq, Mónaco, Polonia, Rusia, República Eslovaca, Ucrania, etc.

## Identifying the parts

## Identificación de los componentes



1 **POWER switch** (p.13)

2 **STEADY SHOT switch** (p.56)

3 **MENU button** (p.31)

4 **Control dial** (p.31)

5 **PICTURE EFFECT button** (p.42)

6 **DIGITAL EFFECT button (CCD-TR3300E only)** (p.43)

7 **TITLE button** (p.53)

8 **16:9WIDE button** (p.50)

9 **Eyecup** (p.18)

10 **Viewfinder lens adjustment ring (CCD-TR2200E only)** (p.14)

11 **RELEASE knob (CCD-TR2200E only)** (p.101)

12 **Viewfinder lens adjustment lever (CCD-TR3300E only)** (p.14)

13 **Power zoom lever** (p.16)

14 **BATT (battery) PUSH button** (p.11)

15 **STANDBY switch** (p.13, 14)

16 **START/STOP button** (p.13, 14)

17 **Hooks for shoulder strap** (p.122)

18 **Battery mounting surface**

19 **START/STOP MODE switch** (p.51)

1 **Interruptor POWER** (pág.13)

2 **Interruptor STEADY SHOT** (pág.56)

3 **Botón MENU** (pág.31)

4 **Dial de control** (pág.31)

5 **Botón PICTURE EFFECT** (pág.42)

6 **Botón DIGITAL EFFECT (sólo CCD-TR3300E)** (pág.43)

7 **Botón TITLE** (pág.53)

8 **Botón 16:9WIDE** (pág.50)

9 **Ocular** (pág.18)

10 **Anillo de ajuste del objetivo del visor electrónico (sólo CCD-TR2200E)** (pág.14)

11 **Mando RELEASE (sólo CCD-TR2200E)** (pág.101)

12 **Palanca de ajuste del objetivo del visor electrónico (sólo CCD-TR3300E)** (pág.14)

13 **Palanca de alimentación de zoom** (pág.16)

14 **Botón BATT (batería) PUSH** (pág.11)

15 **Interruptor STANDBY** (pág.13, 14)

16 **Botón START/STOP** (pág.13, 14)

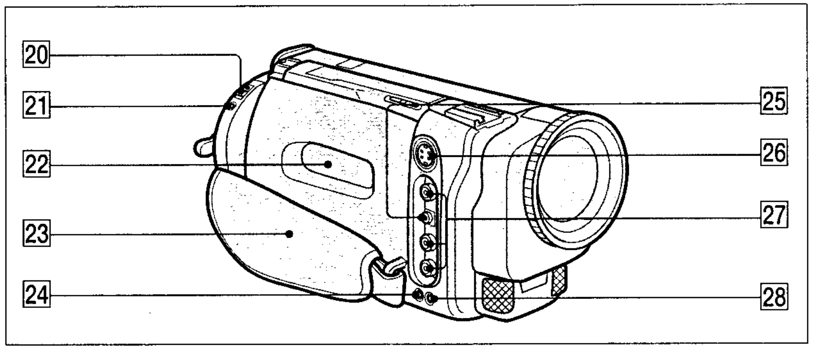
17 **Ganchos para el asa de hombro** (pág.122)

18 **Superficie de montaje de batería**

19 **Interruptor START/STOP MODE** (pág.51)

## Identifying the Parts

## Identificación de los componentes



20 **EJECT switch** (p.12)

21 **REMOTE LANC ⓛ control jack**
l stands for Local Application Control Bus System. The l control jack is used for controlling the tape transport of video equipment and peripherals connected to it. This jack has the same function as the jack indicated as CONTROL L or REMOTE.

22 **Cassette compartment** (p.12)

23 **Grip strap** (p.18)

24 **∩ (headphone) jack** (p.24)

25 **RFU DC OUT (RFU adaptor DC output) jack** (p.22)

26 **S VIDEO jack** (p.21, 22)

27 **VIDEO/AUDIO jacks** (p.21, 22)

28 **MIC jack (PLUG IN POWER)**
Connect an external microphone (not supplied). This jack also accepts a "plug-in-power" microphone.

20 **Interruptor EJECT** (pág.12)

21 **Toma de control REMOTE LANC ⓛ**
l significa Sistema de control bus de aplicación local (Local Application Control Bus System).
La toma de control l se utiliza para controlar el transporte de cinta del equipo de vídeo y de periféricos conectados al mismo. Esta toma presenta la misma función que la toma indicada como CONTROL L o REMOTE.

22 **Compartimiento de videocassettes** (pág.12)

23 **Correa de fijación** (pág.18)

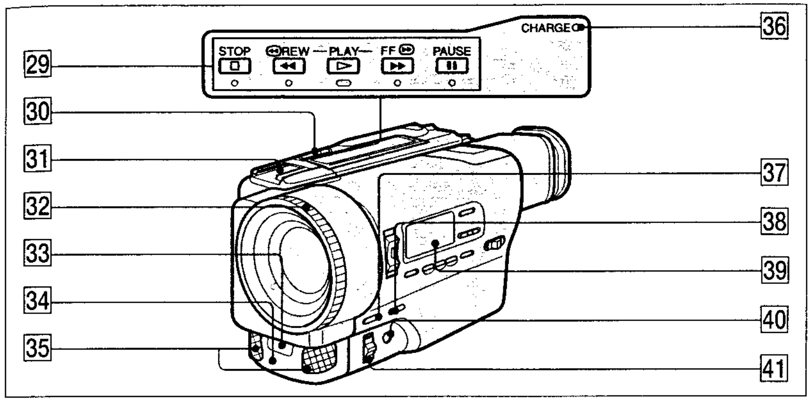
24 **Toma de auriculares ∩** (pág.24)

25 **Toma RFU DC OUT (salida de CC del adaptador RFU)** (pág.22)

26 **Toma S VIDEO** (pág.21, 22)

27 **Tomas VIDEO/AUDIO** (pág.21, 22)

28 **Toma MIC (PLUG IN POWER)**
Conecte un micrófono externo (no suministrado). Esta toma también acepta micrófonos de "enchufe de alimentación".



29 **Tape transport buttons** (p.23, 24, 25)
- ☐ STOP (stop)
- ◀◀ REW (rewind)
- ▷ PLAY (playback)
- ▶▶ FF (fastforward)
- ❚❚ PAUSE (pause)

30 **EDITSEARCH button** (p.20)

31 **Accessory shoe**
Supplies power to optional accessories such as a video light.

32 **Focus ring** (p.61)

33 **Remote sensor** (p.122)
Aim the Remote Commander here for remote control.

34 **Camera recording/battery lamp** (p.13)

35 **Microphone**

36 **CHARGE lamp** (p.8, 28)

37 **FADER/OVERLAP button (CCD-TR3300E only)** (p.36, 38, 39)
**FADER button (CCD-TR2200E only)** (p.36)

38 **BACKLIGHT button** (p.73)

39 **Display window** (p.123)

40 **PUSH AUTO button** (p.61)

41 **FOCUS switch** (p.61)

29 **Botones de transporte de cinta** (pág.23, 24, 25)
- ☐ STOP (parada)
- ◀◀ REW (rebobinado)
- ▷ PLAY (reproducción)
- ▶▶ FF (avance rápido)
- ❚❚ PAUSE (pausa)

30 **Botón EDITSEARCH** (pág.20)

31 **Zapata accesoria**
Suministra alimentación a accesorios opcionales, como una lámpara de vídeo.

32 **Anillo de enfoque** (pág.61)

33 **Sensor remoto** (pág.122)
Oriente el mando a distancia aquí para control remoto.

34 **Indicador de grabación/batería de cámara** (pág.13)

35 **Micrófono**

36 **Indicador CHARGE** (pág.8, 28)

37 **Botón FADER/OVERLAP (sólo CCD-TR3300E)** (pág.36, 38, 39)
**Botón FADER (sólo CCD-TR2200E)** (pág.36)

38 **Botón BACKLIGHT** (pág.73)

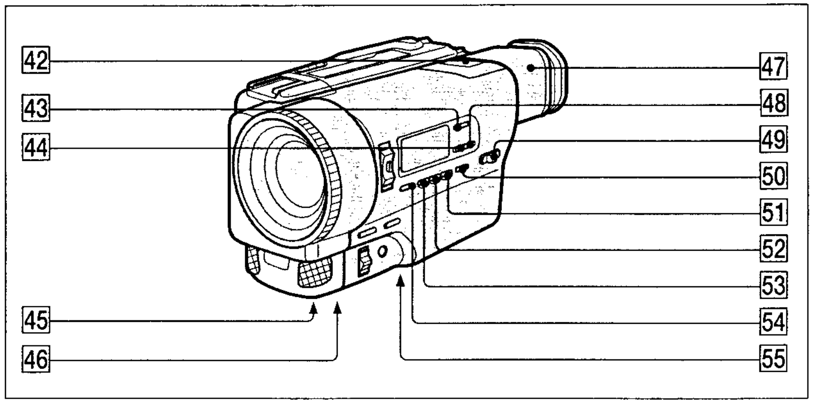
39 **Visor principal** (pág.124)

40 **Botón PUSH AUTO** (pág.61)

41 **Interruptor FOCUS** (pág.61)

## Identifying the Parts

## Identificación de los componentes



42 **Lighting aperture (CCD-TR3300E only)**

43 **COUNTER RESET button** (p.15, 47, 80)

44 **DATE button** (p.26, 35)

45 **Tripod receptacle** (p.18)

46 **Lithium battery compartment** (p.91)

47 **Viewfinder** (p.14, 101)

48 **TIME button** (p.26, 35)

49 **AUTO LOCK/HOLD switch** (p.62)

50 **WHT BAL(white balance) button** (p.76)

51 **GAIN button** (p.68)

52 **SHUTTER SPEED button** (p.68, 70)

53 **IRIS button** (p.68)

54 **PROGRAM AE button** (p.62)

55 **Handycam station connection**

42 **Apertura de iluminación (sólo CCD-TR3300E)**

43 **Botón COUNTER RESET** (pág.15, 47, 80)

44 **Botón DATE** (pág.26, 35)

45 **Receptáculo para trípode** (pág.18)

46 **Compartimiento de la pila de litio** (pág.91)

47 **Visor electrónico** (pág.14, 101)

48 **Botón TIME** (pág.26, 35)

49 **Interruptor AUTO LOCK/HOLD** (pág.62)

50 **Botón WHT BAL(balance de blancos)** (pág.76)

51 **Botón GAIN** (pág.68)

52 **Botón SHUTTER SPEED** (pág.68, 70)

53 **Botón IRIS** (pág.68)

54 **Botón PROGRAM AE** (pág.62)

55 **Conexión de estación Handycam**

## To Watch the demonstration

You can watch a brief demonstration of pictures with special effects.
If the demonstration appears when you turn on the camcorder for the first time, exit the demo mode to use your camcorder. For details on the location of the buttons, refer to the pages 115 and 117.

### To enter Demo mode

**(1)** Remove the cassette and set the POWER switch to PLAYER.
**(2)** Turn STANDBY up.
**(3)** While holding down ▷, set the POWER switch to CAMERA. Demonstration starts.

If a cassette is inserted, the demo mode will stop. Note that once you enter demo mode, this mode is retained as long as lithium battery is in place. Therefore demonstration starts automatically 10 minutes later every time you set the POWER switch to CAMERA or 10 minutes after the cassette has been removed.

### To exit Demo mode

**(1)** Turn the POWER switch to PLAYER.
**(2)** Turn STANBY up.
**(3)** While holding down □, turn the POWER switch to CAMERA.

## Para visualizar la demostración

Es posible visualizar una breve demostración de imágenes con efectos especiales.
Si la demostración aparece al encender la videocámara por primera vez, salga del modo de demostración para emplear la videocámara. Para obtener información detallada sobre la ubicación de los botones, consulte las páginas 115 y 117.

### Para entrar en el modo de demostración

**(1)** Extraiga el videocassette y ajuste el interruptor POWER en PLAYER.
**(2)** Gire STANDBY hacia arriba.
**(3)** Mientras pulsa ▷, ajuste el interruptor POWER en CAMERA. La demostración se inicia.

Si ya hay un videocassette insertado, el modo de demostración se detendrá. Tenga en cuenta que una vez introducido el modo de demostración, éste se mantendrá siempre que no retire la pila de litio. Por tanto, la demostración se inicia automáticamente 10 minutos después cada vez que ajuste el interruptor POWER en CAMERA o 10 minutos después de haber extraído el videocassette.

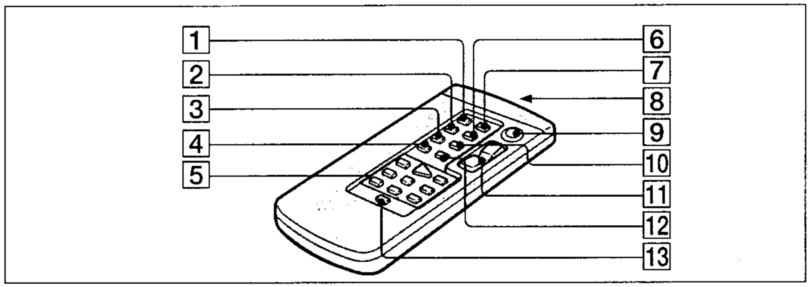
### Para salir del modo de demostración

**(1)** Gire el interruptor POWER hasta PLAYER.
**(2)** Gire STANBY hacia arriba.
**(3)** Mientras pulsa □ , gire el interruptor POWER hasta CAMERA.

## Identifying the parts

### Remote Commander

The buttons that have the same name on the Remote Commander as on the camcorder function identically.



1 **COUNTER RESET button** (p.15, 47, 80)

2 **TIME CODE WRITE button** (p.86)

3 **INDEX MARK** (p.81)

4 **DATE SEARCH button** (p.79)

5 **Tape transport buttons** (p.23)

6 **DATA CODE button** (p.26)

7 **ZERO MEM button** (p.47, 80)

8 **Transmitter**
Point toward the remote sensor to control the camcorder after turning on the camcorder.

9 **START/STOP button** (p.13, 14)

10 **INDEX ERASE** (p.85)

11 **Power zoom button** (p.16)

12 **INDEX SEARCH button** (p.83, 84, 85)

13 **DISPLAY button** (p.24)

## Identificación de los componentes

### Mando a distancia

Los botones del mando a distancia y de la videocámara con el mismo nombre funcionan de forma idéntica.

1 **Botón COUNTER RESET** (pág.15, 47, 80)

2 **Botón TIME CODE WRITE** (p.86)

3 **INDEX MARK** (pág.81)

4 **Botón DATE SEARCH** (p.79)

5 **Botones de transporte de cinta** (pág.23)

6 **Botón DATA CODE** (pág.26)

7 **Botón ZERO MEM** (pág.47, 80)

8 **Transmisor**
Oriéntelo hacia el sensor remoto para controlar la videocámara después de encenderla.

9 **Botón START/STOP** (pág.13, 14)

10 **INDEX ERASE** (pág.85)

11 **Botón de alimentación de zoom** (pág.16)

12 **Botón INDEX SEARCH** (pág.83, 84, 85)

13 **Botón DISPLAY** (pág.24)

### To prepare the Remote Commander

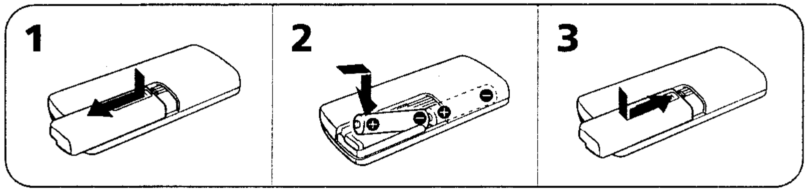
To use the Remote Commander, you must insert two R6 (size AA) batteries. Use the supplied R6 (size AA) batteries.

**(1)** Remove the battery cover from the Remote Commander.
**(2)** Insert both of the R6 (size AA) batteries with correct polarity.
**(3)** Put the battery cover back onto the Remote Commander.

### Preparación del mando a distancia

Para emplear el mando a distancia, es necesario insertar las dos pilas R6 (tamaño AA) suministradas.

**(1)** Retire la cubierta del compartimiento de las pilas del mando a distancia.
**(2)** Inserte las dos pilas R6 (tamaño AA) con la polaridad correcta.
**(3)** Vuelva a colocar la cubierta en el mando a distancia.



**Note on battery life**

The batteries for the Remote Commander last about 6 months under normal operation. When the batteries become weak or dead, the Remote Commander does not work.

**To avoid damage from possible battery leakage**

Remove the batteries when you will not use the Remote Commander for a long time.

### To use the Remote Commander

Make sure that the COMMANDER is set to ON in the menu system on the camcorder.

**Nota sobre la duración de las pilas**

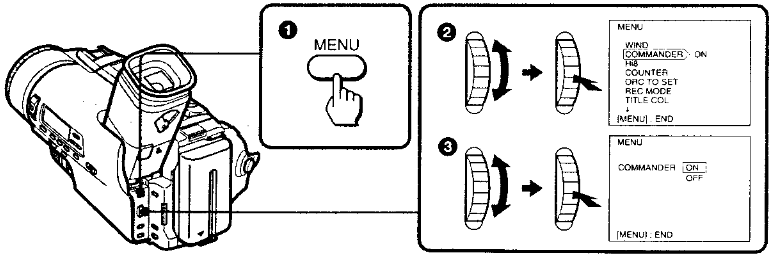
La duración de las pilas del mando a distancia es de 6 meses aproximadamente en condiciones de uso normal. Si las pilas se agotan, el mando a distancia no funcionará.

**Para evitar posibles daños causados por fugas**

Extraiga las pilas cuando no vaya a utilizar el mando a distancia durante mucho tiempo.

### Para emplear el mando a distancia

Compruebe que COMMANDER está ajustado en ON en la videocámara en el sistema de menú.



MENU

WIND
COMMANDER ON
Hi8
COUNTER
ORC TO SET
REC MODE
TITLE COL
↓
[MENU] : END

MENU

COMMANDER ON
OFF

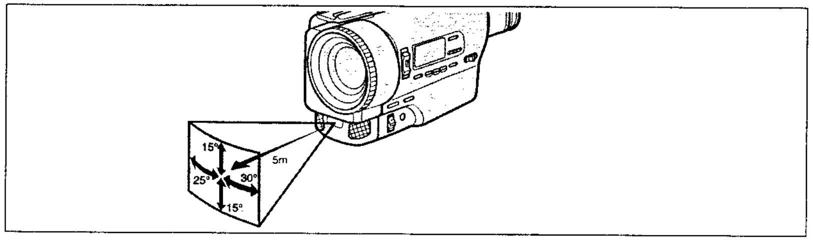
[MENU] : END

## Identifying the parts

## Identificación de los componentes

### Remote control direction

### Area controlable mediante el control remoto



**Notes on the remote commander**

- Keep the remote sensor away from strong light sources such as direct sunlight or illumination. Otherwise, the remote control may not be effective.
- Be sure that there is no obstacle between the remote sensor on the camcorder and the Remote Commander.
- This camcorder works in commander mode VTR 2. The commander modes (1, 2 and 3) are used to distinguish this camcorder from other Sony VCRs to avoid remote control misoperation. If you use another Sony VCR in commander mode VTR 2, we recommend you change the commander mode or cover the remote sensor of the VCR with black paper.

**Notas sobre el mando a distancia**

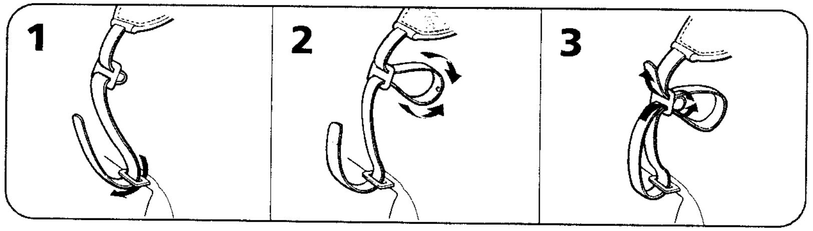
- mantenga el sensor remoto alejado de fuentes de iluminación intensas, como la luz solar directa u otras fuentes luminosas intensas. En caso contrario, el control remoto puede no ser efectivo.
- Compruebe que no hay obstáculos entre el sensor remoto de la videocámara y el mando a distancia.
- Esta videocámara funciona en modo de mando VTR 2. Los modo de mando (1, 2 y 3) se emplean para diferenciar esta videocámara de otras videograbadoras
Sony con el fin de evitar operaciones inadecuadas del control remoto. Si emplea otra videograbadora Sony en modo de mando VTR 2, se recomienda cambiar el modo o cubrir el sensor remoto de la videograbadora con papel negro.

### Attaching the shoulder strap

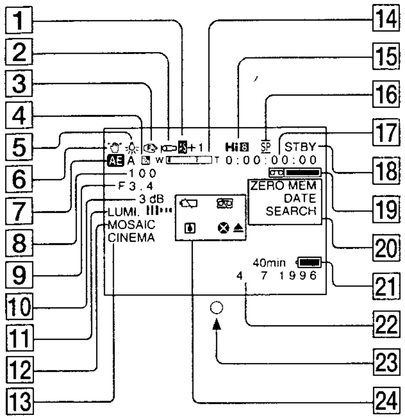
Attach the supplied shoulder strap to the hooks for the shoulder strap .

### Fijación del asa de hombro

Fije el asa de hombro suministrado en los ganchos para dicho asa.



## Operations indicators



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Hi8
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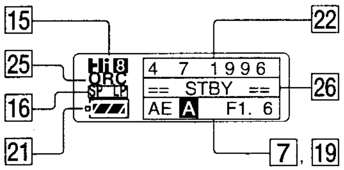
STBY
AE A W T 0:00:00:00
100
F3.4
3dB
LUMI.
MOSAIC
CINEMA
ZERO MEM
DATE
SEARCH
40min
4 7 1996



15
25
16
21
22
26
7, 19
Hi8
ORC
SP LP
4 7 1996
== STBY ==
AE A F1. 6

1 **AE Shift indicator** (p.74)

2 **WIND indicator** (p.32)

3 **Manual focusing** (p.61, 62)

4 **Backlight indicator** (p.73)

5 **White balance indicator** (p.75)

6 **Steady Shot indicator** (p.56)

7 **PROGRAM AE indicator** (p.62)

8 **Shutter speed indicator** (p.64, 68, 70)

9 **Iris indicator** (p.63, 68)

10 **Gain indicator** (p.68)

11 **FADER indicator (CCD-TR2200E)** (p.36)
**Digital Effect and FADER/OVERLAP/WIPE indicator (CCD-TR3300E)** (p.36, 38, 39, 43, 44, 46)

12 **Picture Effect indicator** (p.42)

13 **Wide mode indicator** (p.50)

14 **Zoom indicator** (p.17)

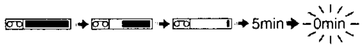
15 **Playing back or recording in Hi8 format** (p.93)

16 **Recording/playing back mode indicator** (p.94)

17 **Tape counter/RC time code indicator** (p.32, 86)

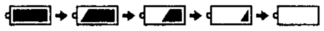
18 **Standby indicator** (p.14)

19 **Remaining tape indicator**



20 **Date search/Date scan indicator/TIME CODE WRITE indicator/ZERO MEM indicator** (p.79, 80, 86)

21 **Remaining battery indicator** (p.96)



22 **Date or Time indicator** (p.35)

23 **Recording lamp/Battery lamp** (p.13)

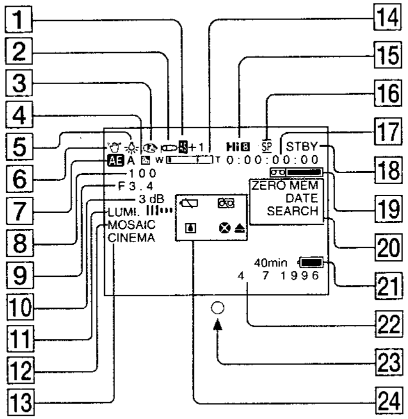
24 **Warning indicators** (p.125)

25 **ORC indicator** (p.57)

26 **Tape transport mode** (p.23, 24, 25)

## Identificación de los componentes

### Indicadores de operaciones



1
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15
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18
19
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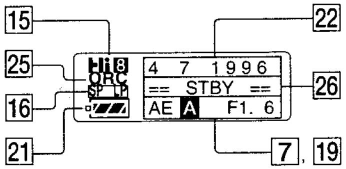
21
22
23
24
+1
Hi8
SP
STBY
AE A W T 0:00:00:00
100
F3.4
3dB
LUMI.
MOSAIC
CINEMA
ZERO MEM
DATE
SEARCH
40min
4 7 1996



15
25
16
21
22
26
7, 19
Hi8
ORC
SP LP
4 7 1996
== STBY ==
AE A F1. 6

1 **Indicador de desplazamiento AE** (pág.74)

2 **Indicador WIND** (pág.32)

3 **Enfoque manual** (pág.61, 62)

4 **Indicador de iluminación de fondo** (pág.73)

5 **Indicador de balance de blancos** (pág.75)

6 **Indicador de la función Steady Shot** (pág.56)

7 **Indicador PROGRAM AE** (pág.62)

8 **Indicador de velocidad de obturación** (pág.64, 68, 70)

9 **Indicador de iris** (pág.63, 68)

10 **Indicador de ganancia** (pág.68)

11 **Indicador FADER (CCD-TR2200E)** (pág.36)
**Indicador de efecto digital y FADER/OVERLAP/WIPE (CCD-TR3300E)** (pág.36, 38, 39, 43, 44, 46)

12 **Indicador de efecto de imagen** (pág.42)

13 **Indicador de modo panorámico** (pág.50)

14 **Indicador de zoom** (pág.17)

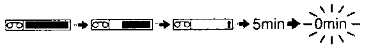
15 **Reproducción o grabación con formato Hi8** (pág.93)

16 **Indicador de modo de grabación/reproducción** (pág.94)

17 **Indicador de contador de cinta/código de tiempos RC** (pág.32, 86)

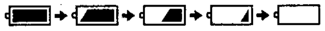
18 **Indicador de modo de espera** (pág.14)

19 **Indicador de cinta restante**



20 **Indicador de búsqueda de fechas/exploración de fechas/Indicador TIME CODE WRITE/Indicador ZERO MEM** (pág.79, 80, 86)

21 **Indicador de batería restante** (pág.96)



22 **Indicador de fecha u hora** (pág.35)

23 **Indicador de grabación/batería** (pág.13)

24 **Indicadores de aviso** (pág.125)

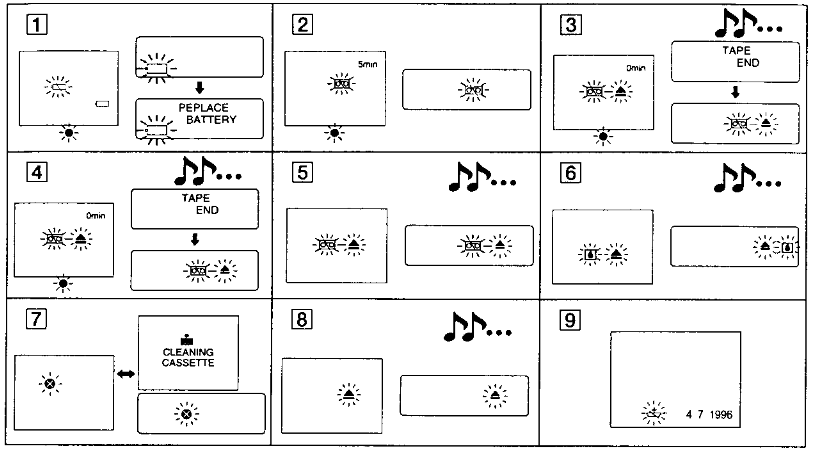
25 **Indicador OCR** (pág.57)

26 **Modo de transporte de cinta** (pág.23, 24, 25)

# Warning indicators

If indicators flash in the viewfinder or in the display window, check the following:

♪: you can hear the beep sound when the BEEP is set to ON.



1 **The battery is weak or dead.**
Slow flashing: The battery is weak.
Fast flashing: The battery is dead.

2 **The tape is near the end.**
The flashing is slow.

3 **The tape has run out.**
The flashing becomes rapid.

4 **No tape has been inserted.**

5 **The tab on the tape is out (red).**

6 **Moisture condensation has occurred.** (p.99)

7 **The video heads may be contaminated.** (p.100)
This indicator appears only on the viewfinder.

8 **Some other trouble has occurred.**
Disconnect the power source and contact your Sony dealer or local authorized facility.

9 **The lithium battery is weak or is not installed.** (p.90)

# Indicadores de aviso

Si los indicadores parpadean en el visor electrónico o en el visor principal, compruebe lo siguiente:

♪: es posible escuchar el pitido si BEEP está ajustado en ON.

1 **La pila o el paquete está casi agotado o totalmente agotado.**
Parpadeo lento: La pila está casi agotada.
Parpadeo rápido: La pila está agotada.

2 **La cinta ha llegado casi al final.**
El parpadeo es lento.

3 **La cinta se ha acabado.**
El parpadeo es más rápido.

4 **No ha insertado ninguna cinta.**

5 **La lengüeta de la cinta está al descubierto (roja).**

6 **Se ha condensado humedad.** (pág.99)

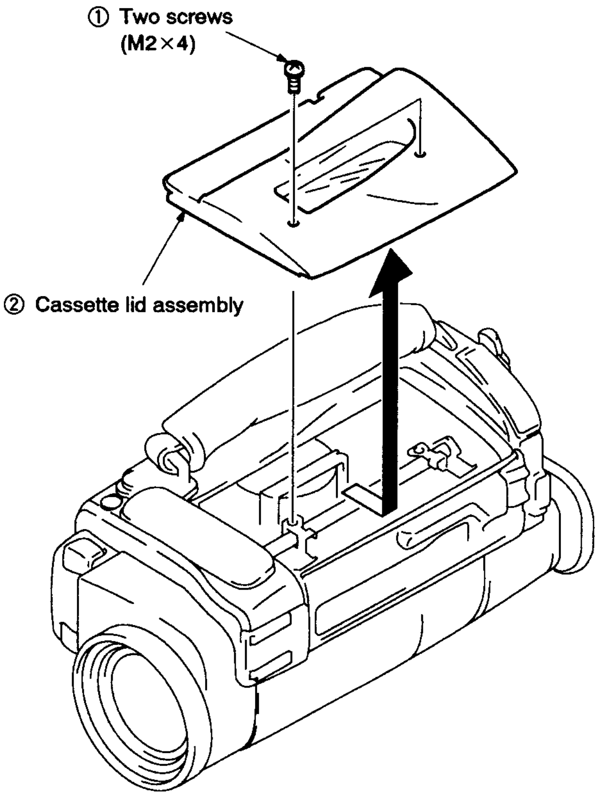
7 **Los cabezales de vídeo pueden estar sucios.** (pág.100)
Este indicador aparece sólo en el visor electrónico.

8 **Se ha producido otro tipo de problema.**
Desconecte la fuente de alimentación y póngase en contacto con un proveedor Sony o un centro de asistencia técnica local autorizado.

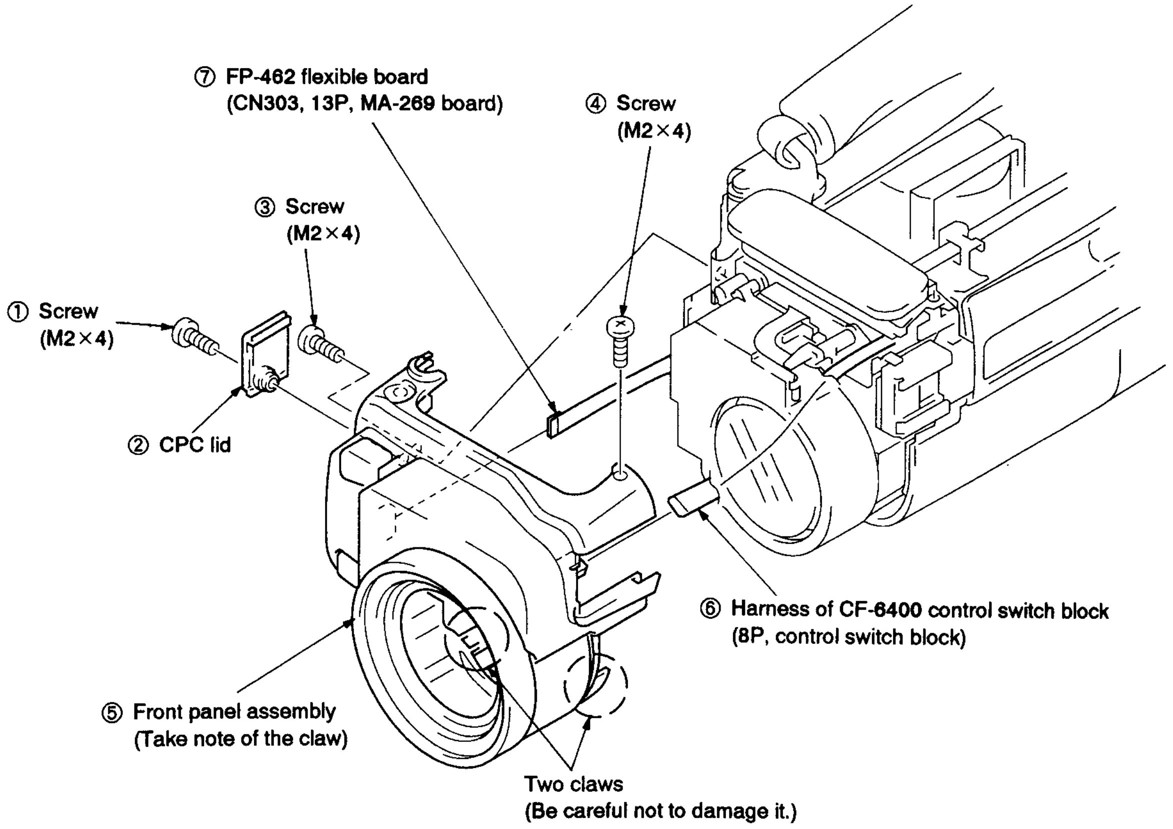
9 **La pila de litio está casi agotada o no está instalada.** (pág.90)

# SECTION 2
# DISASSEMBLY

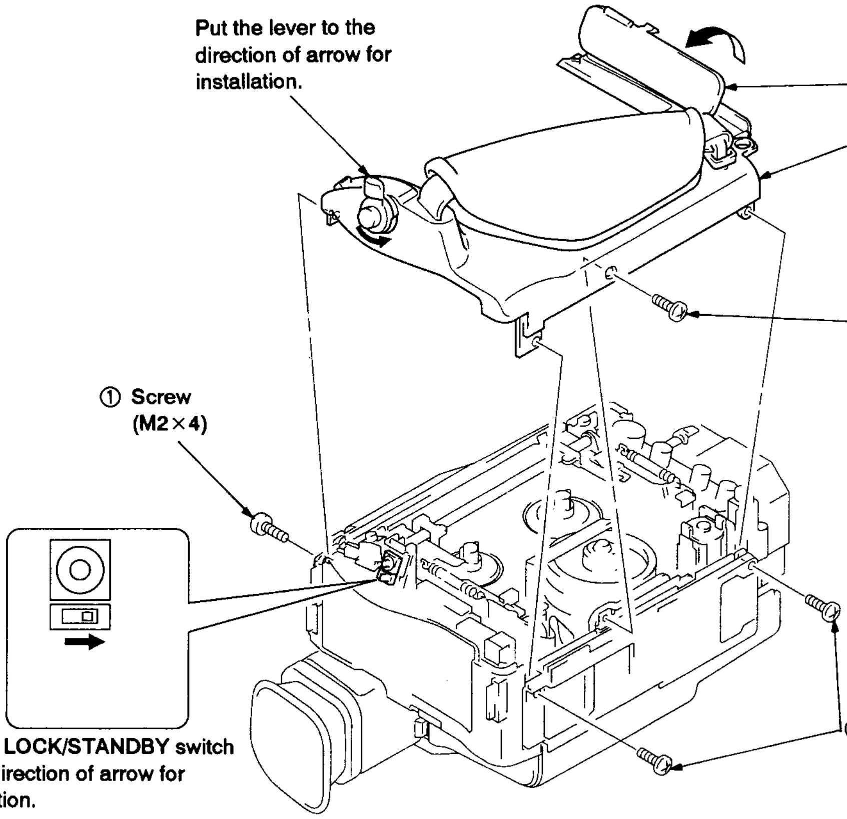
## 2-1. REMOVAL OF CASSETTE LID ASSEMBLY


① Two screws
(M2×4)
② Cassette lid assembly

## 2-2. REMOVAL OF FRONT PANEL ASSEMBLY


⑦ FP-462 flexible board
(CN303, 13P, MA-269 board)
④ Screw
(M2×4)
③ Screw
(M2×4)
① Screw
(M2×4)
② CPC lid
⑥ Harness of CF-6400 control switch block
(8P, control switch block)
⑤ Front panel assembly
(Take note of the claw)
Two claws
(Be careful not to damage it.)

## 2-3. REMOVAL OF CABINET (L) ASSEMBLY


Put the lever to the direction of arrow for installation.

④ Open the jack lid.

⑤ Cabinet (L) assembly

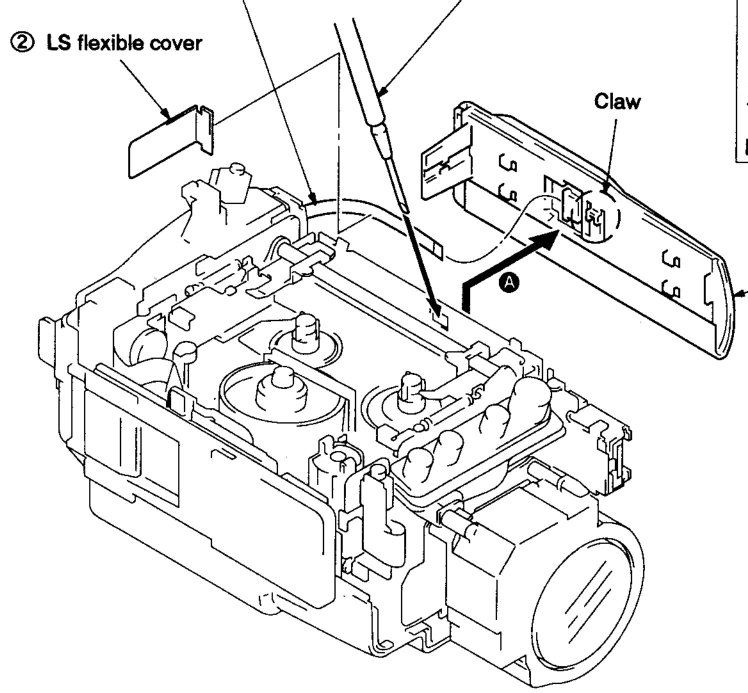
③ Screw (M2×4)

① Screw (M2×4)

Put the LOCK/STANDBY switch to the direction of arrow for installation.

② Two screws (M2×4)

## 2-4. REMOVAL OF LS LID BLOCK ASSEMBLY

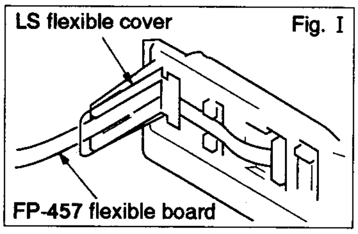

③ FP-457 flexible board (CN151, 8P, FK-67 board) Note for installation (Refer to Fig. I )

Minus screwdriver

② LS flexible cover

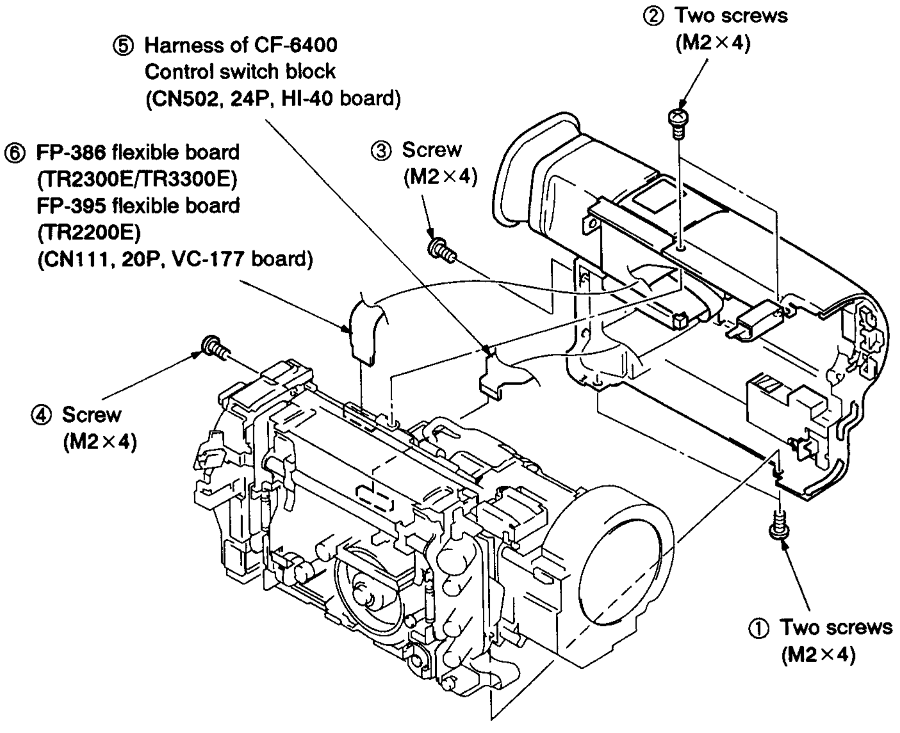
Claw

**Note:** Treat the FP-457 flexible board as in the figure.

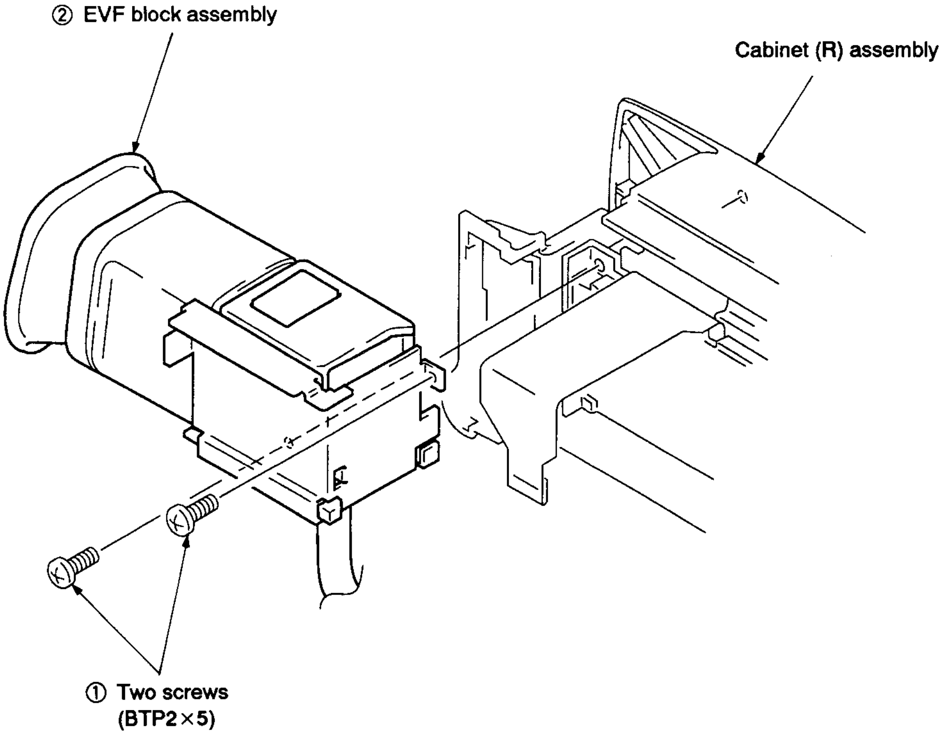


① Remove the LS lid block assembly in the direction of arrow Ⓐ with pushing the claw.

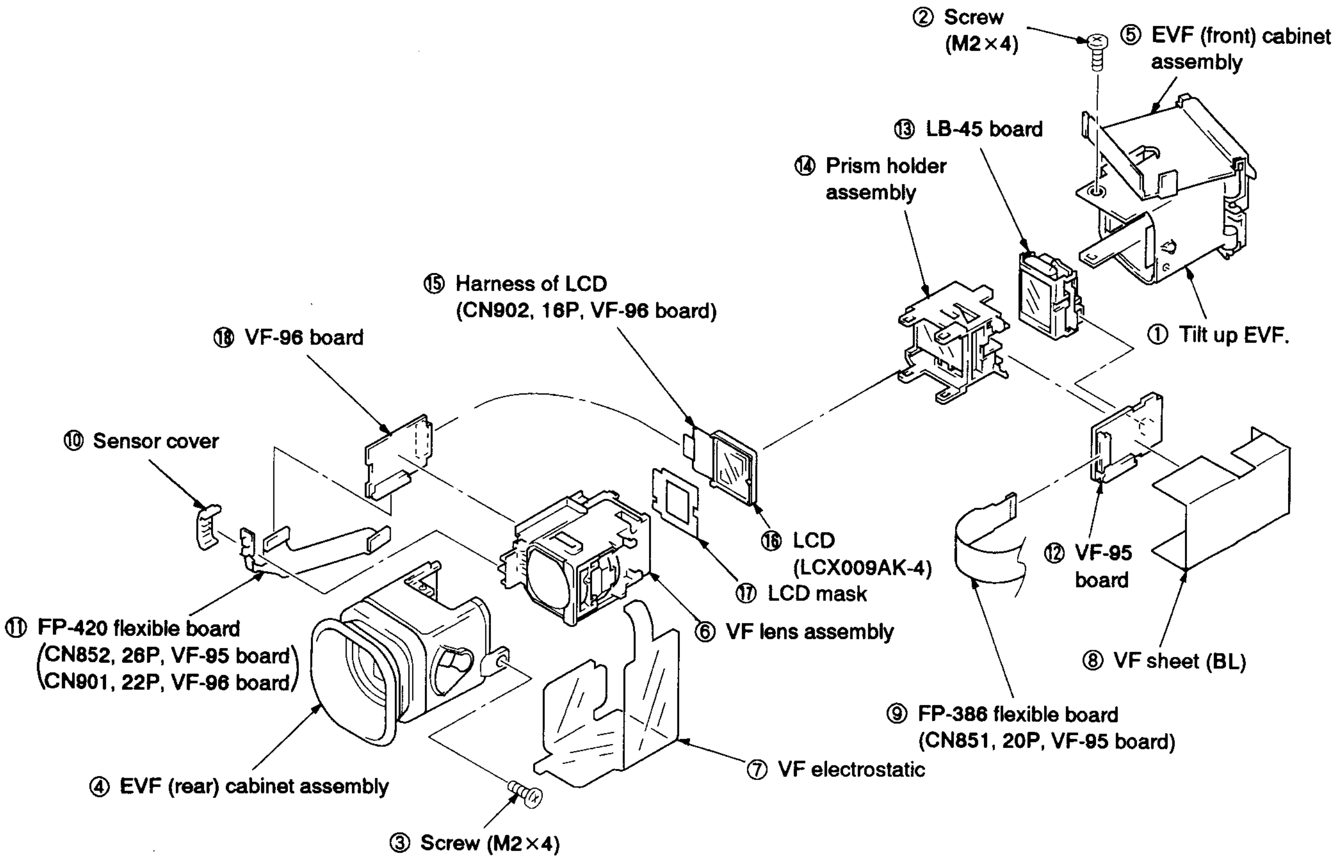
## 2-5. REMOVAL OF CABINET (R) ASSEMBLY


② Two screws
(M2×4)
⑤ Harness of CF-6400
Control switch block
(CN502, 24P, HI-40 board)
⑥ FP-386 flexible board
(TR2300E/TR3300E)
FP-395 flexible board
(TR2200E)
(CN111, 20P, VC-177 board)
③ Screw
(M2×4)
④ Screw
(M2×4)
① Two screws
(M2×4)

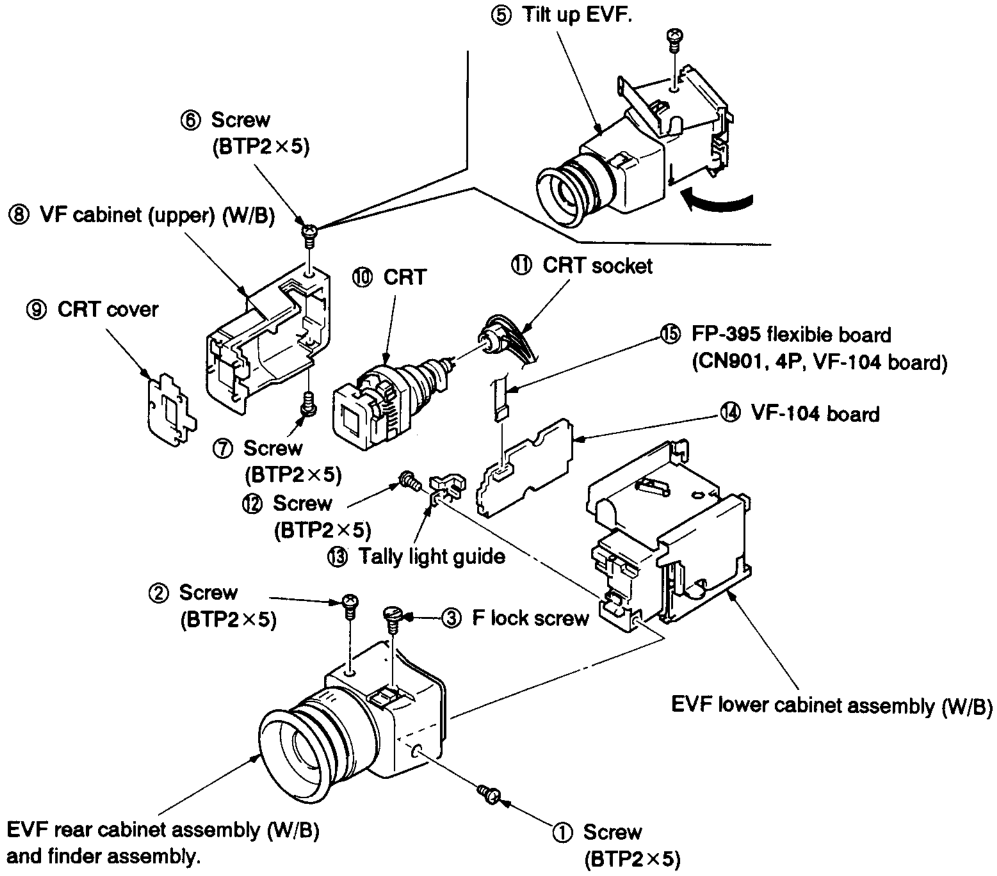
## 2-6. REMOVAL OF EVF BLOCK ASSEMBLY


② EVF block assembly
Cabinet (R) assembly
① Two screws
(BTP2×5)

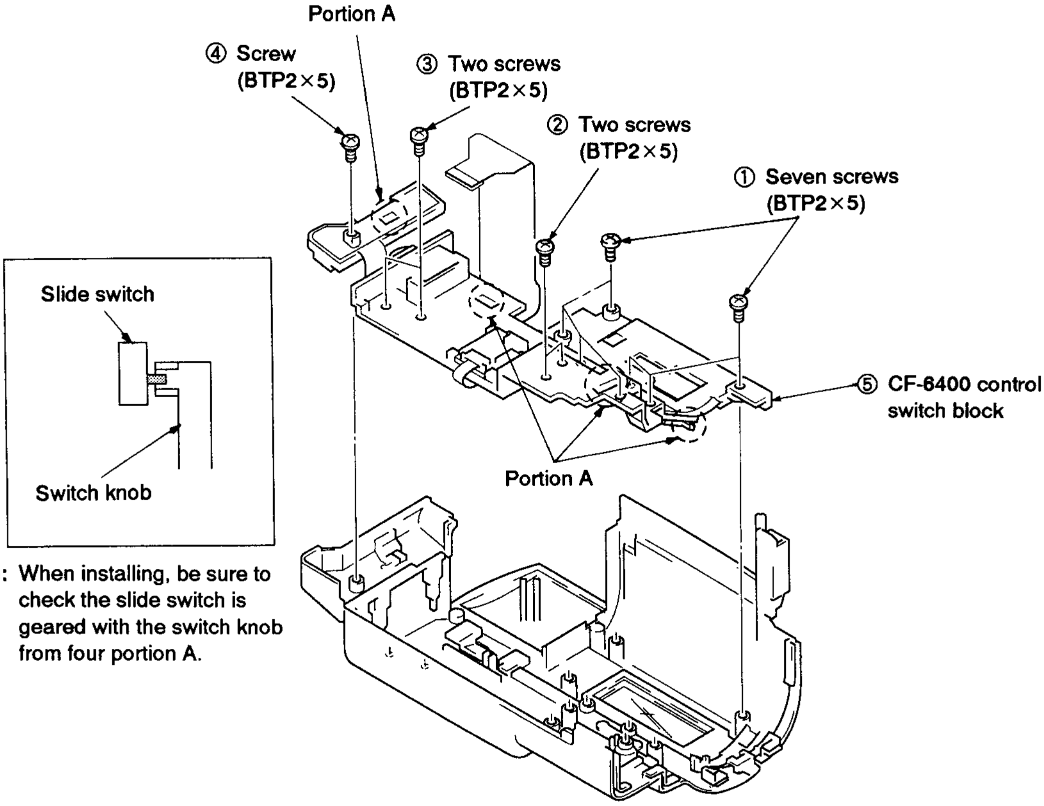
## 2-7. REMOVAL OF EVF ASSEMBLY (COLOR EVF) (TR2300E/TR3300E)


② Screw (M2×4)
⑤ EVF (front) cabinet assembly
⑬ LB-45 board
⑭ Prism holder assembly
⑮ Harness of LCD (CN902, 16P, VF-96 board)
⑱ VF-96 board
① Tilt up EVF.
⑩ Sensor cover
⑫ VF-95 board
⑯ LCD (LCX009AK-4)
⑰ LCD mask
⑪ FP-420 flexible board (CN852, 26P, VF-95 board) (CN901, 22P, VF-96 board)
⑥ VF lens assembly
⑧ VF sheet (BL)
⑨ FP-386 flexible board (CN851, 20P, VF-95 board)
⑦ VF electrostatic
④ EVF (rear) cabinet assembly
③ Screw (M2×4)

## 2-8. REMOVAL OF EVF ASSEMBLY (W/B EVF) (TR2200E)

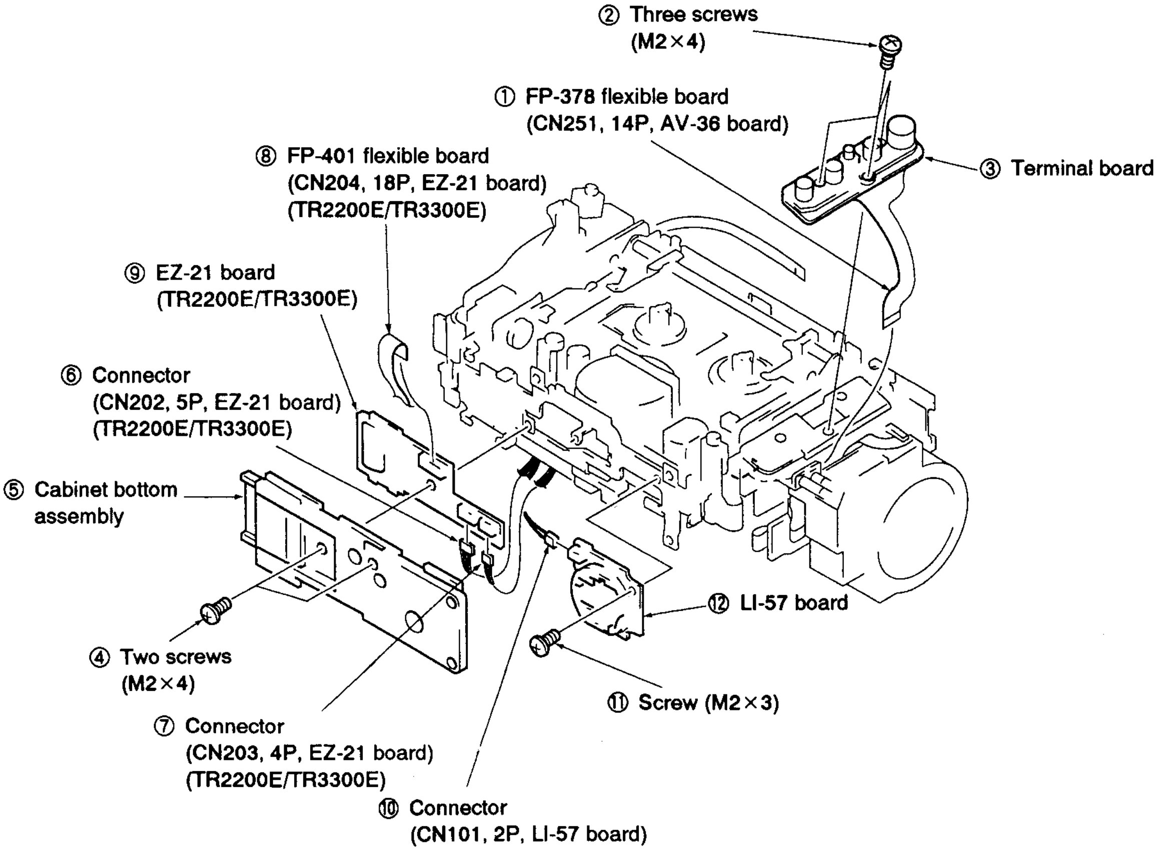

⑤ Tilt up EVF.
⑥ Screw (BTP2×5)
⑧ VF cabinet (upper) (W/B)
⑩ CRT
⑪ CRT socket
⑨ CRT cover
⑮ FP-395 flexible board (CN901, 4P, VF-104 board)
⑭ VF-104 board
⑦ Screw (BTP2×5)
⑫ Screw (BTP2×5)
⑬ Tally light guide
② Screw (BTP2×5)
③ F lock screw
EVF lower cabinet assembly (W/B)
④ EVF rear cabinet assembly (W/B) and finder assembly.
① Screw (BTP2×5)

## 2-9. REMOVAL OF CF-6400 CONTROL SWITCH BLOCK

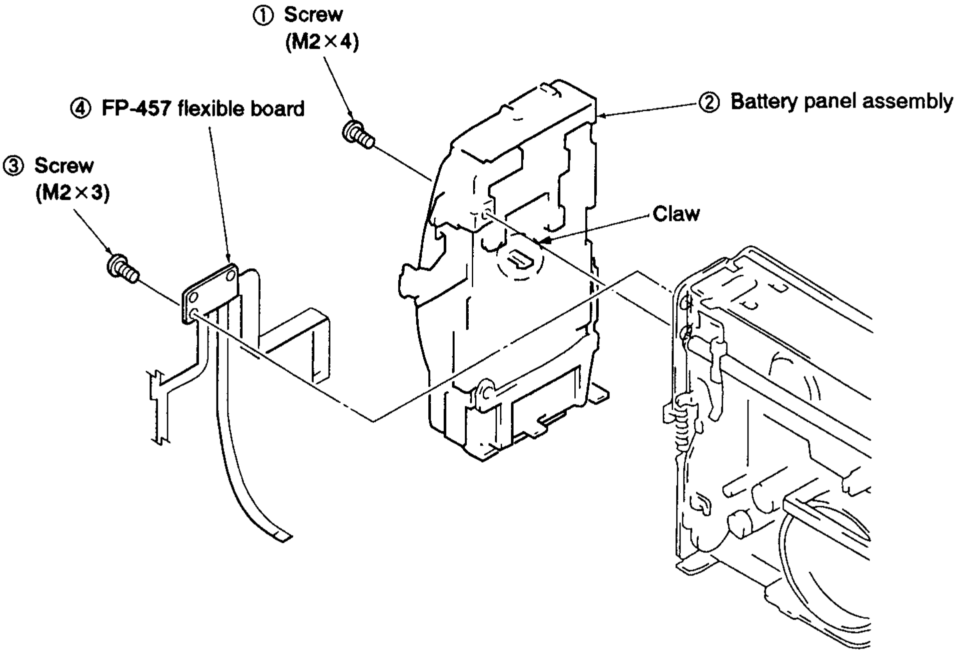

Portion A
④ Screw (BTP2×5)
③ Two screws (BTP2×5)
② Two screws (BTP2×5)
① Seven screws (BTP2×5)
⑤ CF-6400 control switch block
Portion A
Slide switch
Switch knob

**Note:** When installing, be sure to check the slide switch is geared with the switch knob from four portion A.

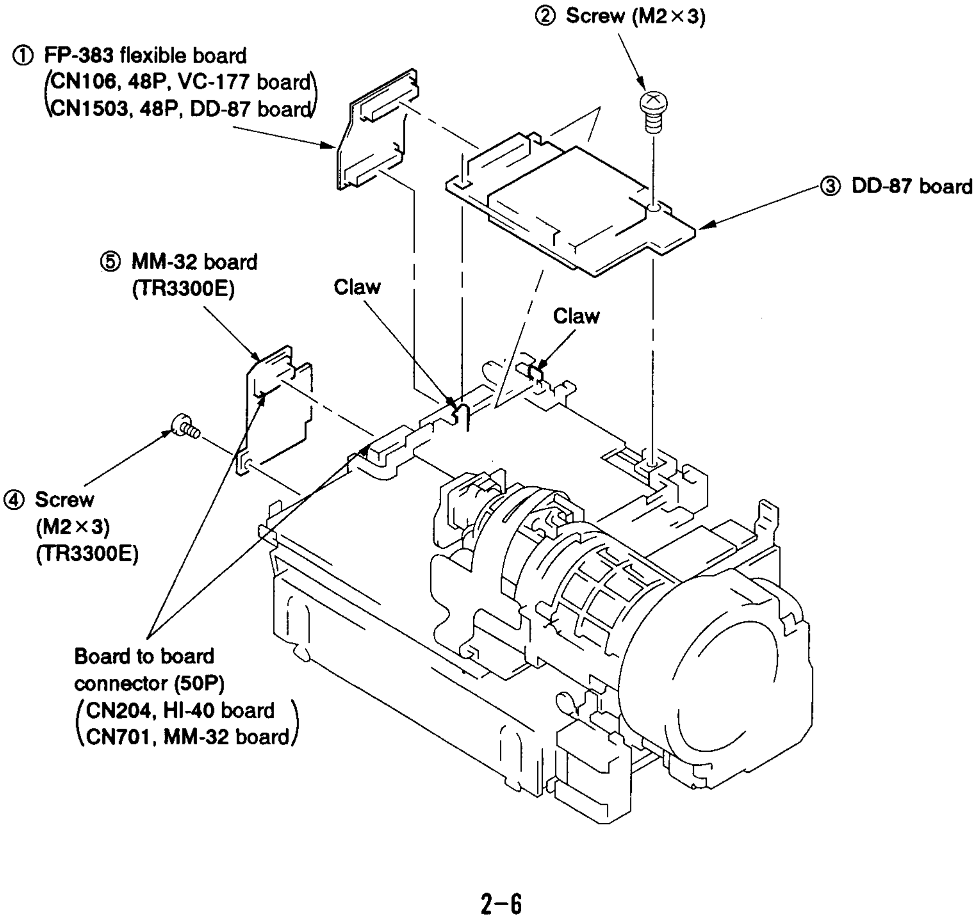
## 2-10. REMOVAL OF CABINET BOTTOM ASSEMBLY, EZ-21 BOARD AND LI-57 BOARD


② Three screws (M2×4)
① FP-378 flexible board (CN251, 14P, AV-36 board)
⑧ FP-401 flexible board (CN204, 18P, EZ-21 board) (TR2200E/TR3300E)
③ Terminal board
⑨ EZ-21 board (TR2200E/TR3300E)
⑥ Connector (CN202, 5P, EZ-21 board) (TR2200E/TR3300E)
⑤ Cabinet bottom assembly
⑫ LI-57 board
④ Two screws (M2×4)
⑪ Screw (M2×3)
⑦ Connector (CN203, 4P, EZ-21 board) (TR2200E/TR3300E)
⑩ Connector (CN101, 2P, LI-57 board)

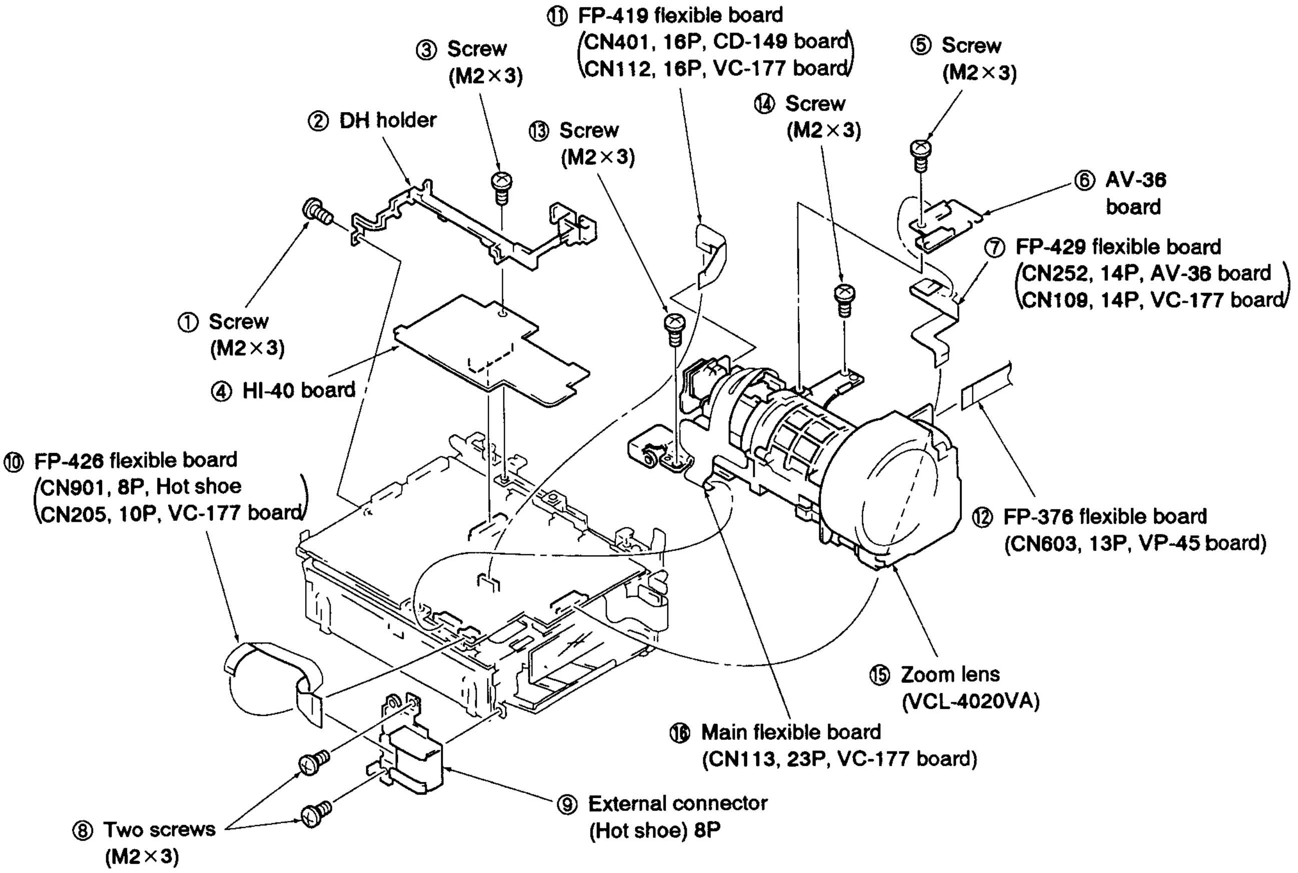
## 2-11. REMOVAL OF BATTERY PANEL ASSEMBLY


① Screw
(M2×4)
④ FP-457 flexible board
② Battery panel assembly
③ Screw
(M2×3)
Claw

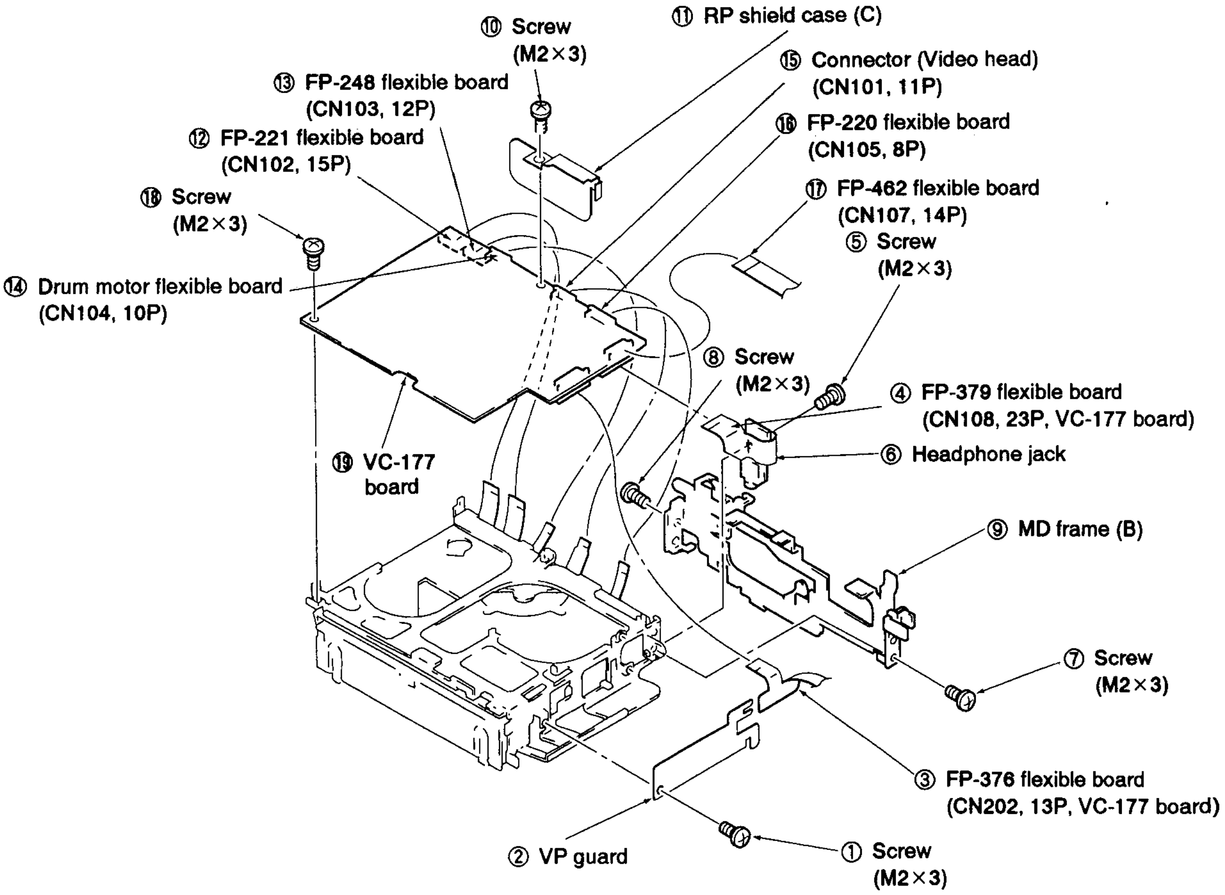
## 2-12. REMOVAL OF DD-87 BOARD AND MM-32 BOARD


② Screw (M2×3)
① FP-383 flexible board
(CN106, 48P, VC-177 board)
(CN1503, 48P, DD-87 board)
③ DD-87 board
⑤ MM-32 board
(TR3300E)
Claw
Claw
④ Screw
(M2×3)
(TR3300E)
Board to board
connector (50P)
(CN204, HI-40 board)
(CN701, MM-32 board)

## 2-13. REMOVAL OF ZOOM LENS (VCL-4020VA), HI-40 BOARD AND AV-36 BOARD


⑪ FP-419 flexible board
(CN401, 16P, CD-149 board
CN112, 16P, VC-177 board)
③ Screw
(M2×3)
⑤ Screw
(M2×3)
⑭ Screw
(M2×3)
② DH holder
⑬ Screw
(M2×3)
⑥ AV-36
board
⑦ FP-429 flexible board
(CN252, 14P, AV-36 board
CN109, 14P, VC-177 board)
① Screw
(M2×3)
④ HI-40 board
⑩ FP-426 flexible board
(CN901, 8P, Hot shoe
CN205, 10P, VC-177 board)
⑫ FP-376 flexible board
(CN603, 13P, VP-45 board)
⑮ Zoom lens
(VCL-4020VA)
⑯ Main flexible board
(CN113, 23P, VC-177 board)
⑨ External connector
(Hot shoe) 8P
⑧ Two screws
(M2×3)

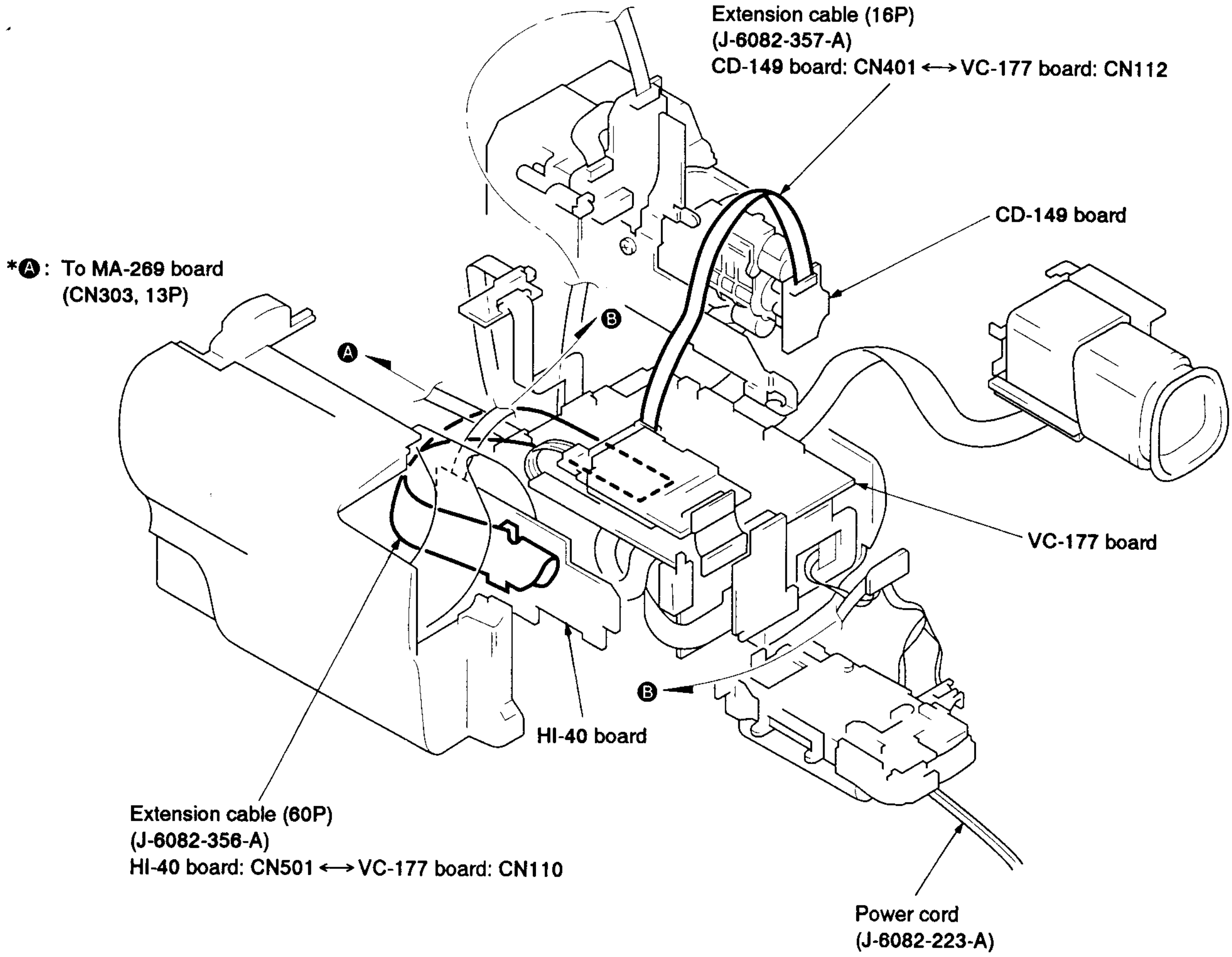
## 2-14. REMOVAL OF VC-177 BOARD


⑩ Screw
(M2×3)
⑪ RP shield case (C)
⑬ FP-248 flexible board
(CN103, 12P)
⑮ Connector (Video head)
(CN101, 11P)
⑫ FP-221 flexible board
(CN102, 15P)
⑯ FP-220 flexible board
(CN105, 8P)
⑱ Screw
(M2×3)
⑰ FP-462 flexible board
(CN107, 14P)
⑤ Screw
(M2×3)
⑭ Drum motor flexible board
(CN104, 10P)
⑧ Screw
(M2×3)
④ FP-379 flexible board
(CN108, 23P, VC-177 board)
⑲ VC-177
board
⑥ Headphone jack
⑨ MD frame (B)
⑦ Screw
(M2×3)
③ FP-376 flexible board
(CN202, 13P, VC-177 board)
② VP guard
① Screw
(M2×3)

## 2-15. SERVICE POSITION

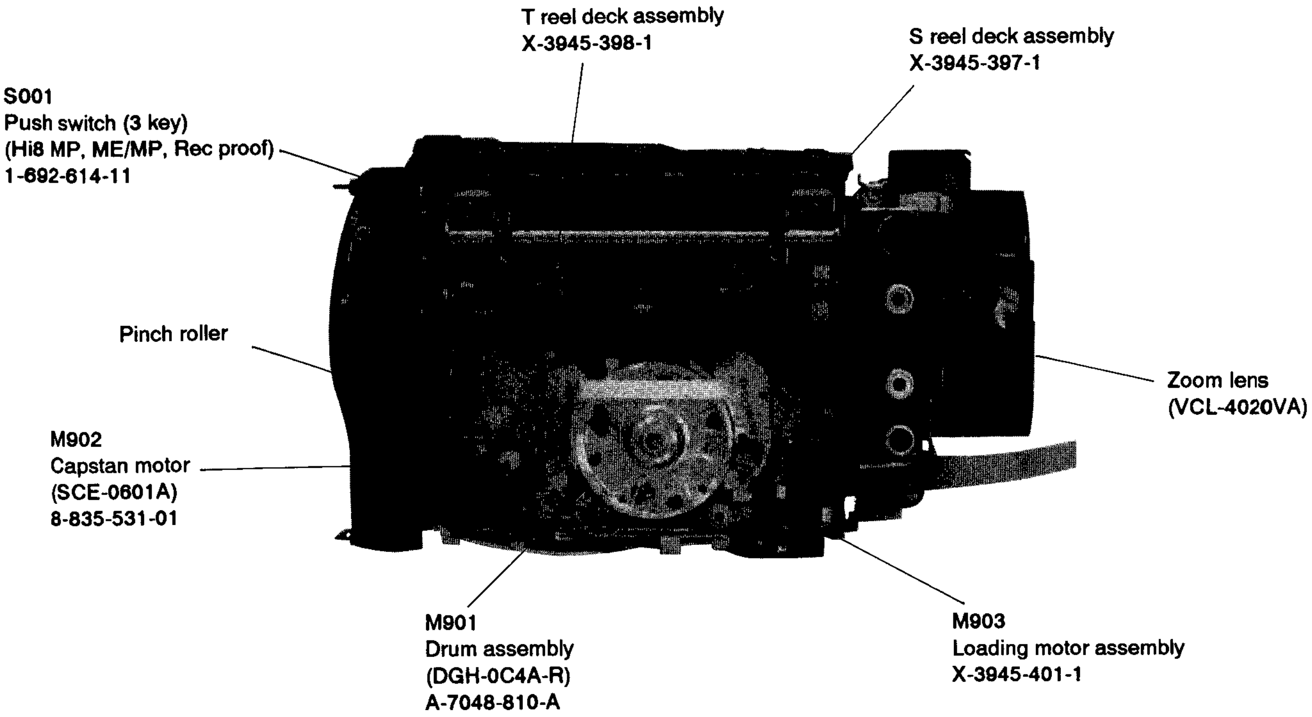
**Note:** When the following parts are removed, be sure to remember the connection parts becuase those connectors and etc. are needed to connect later on.

① Refer to 2-2. to remove the front panel assembly.
② Refer to 2-3. to remove the cabinet (L) assembly.
③ Refer to 2-5. to remove the cabinet (R) assembly.
④ Refer to 2-6. to remove the EVF block assembly.
⑤ Refer to 2-10. to remove the bottom cabinet assembly.
⑥ Refer to 2-11. to remove the battery panel assembly and FP-457 flexible board.
⑦ Refer to 2-12. to remove the DD-87 board.
⑧ Refer to 2-13. to remove the zoom lens, HI-40 board and AV-36 board.

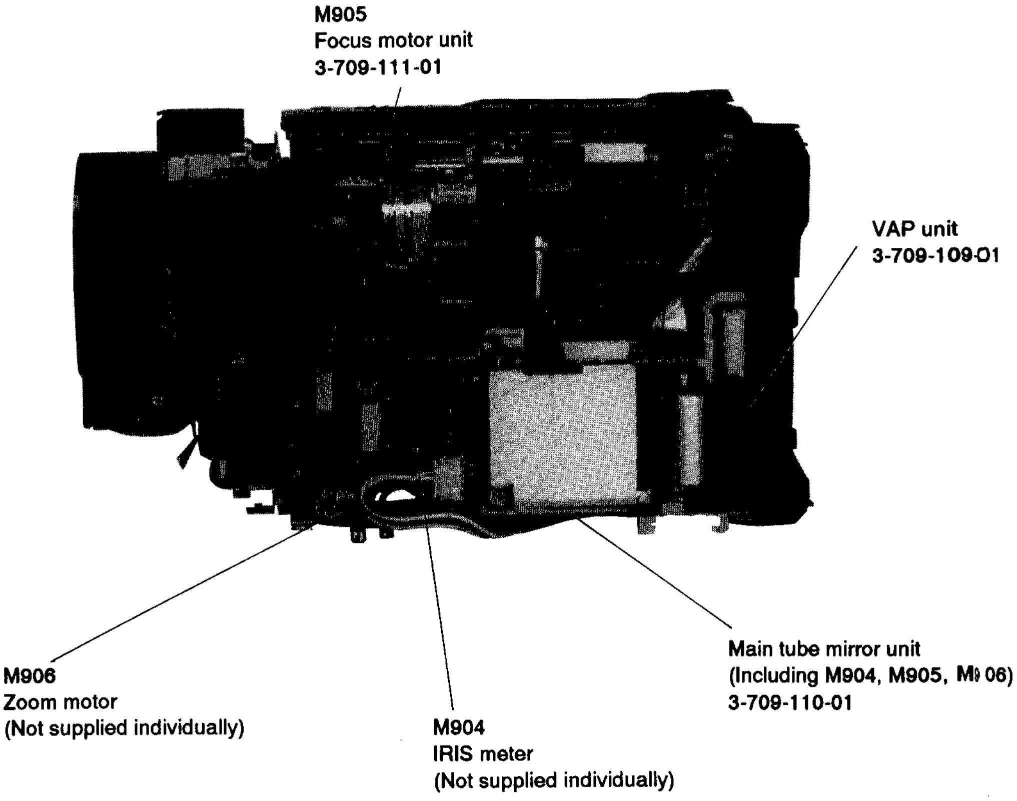

Extension cable (16P)
(J-6082-357-A)
CD-149 board: CN401 ←→ VC-177 board: CN112
CD-149 board
*Ⓐ : To MA-269 board
(CN303, 13P)
Ⓐ
Ⓑ
VC-177 board
Ⓑ
HI-40 board
Extension cable (60P)
(J-6082-356-A)
HI-40 board: CN501 ←→ VC-177 board: CN110
Power cord
(J-6082-223-A)

## 2-16. INTERNAL VIEWS

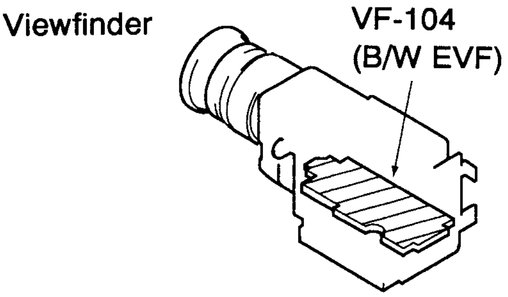
### — Left side —

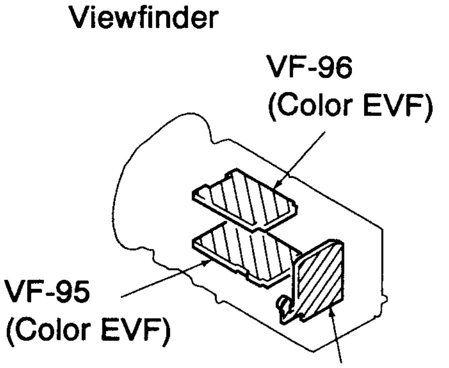

T reel deck assembly
X-3945-398-1
S reel deck assembly
X-3945-397-1
S001
Push switch (3 key)
(Hi8 MP, ME/MP, Rec proof)
1-692-614-11
Pinch roller
Zoom lens
(VCL-4020VA)
M902
Capstan motor
(SCE-0601A)
8-835-531-01
M901
Drum assembly
(DGH-0C4A-R)
A-7048-810-A
M903
Loading motor assembly
X-3945-401-1

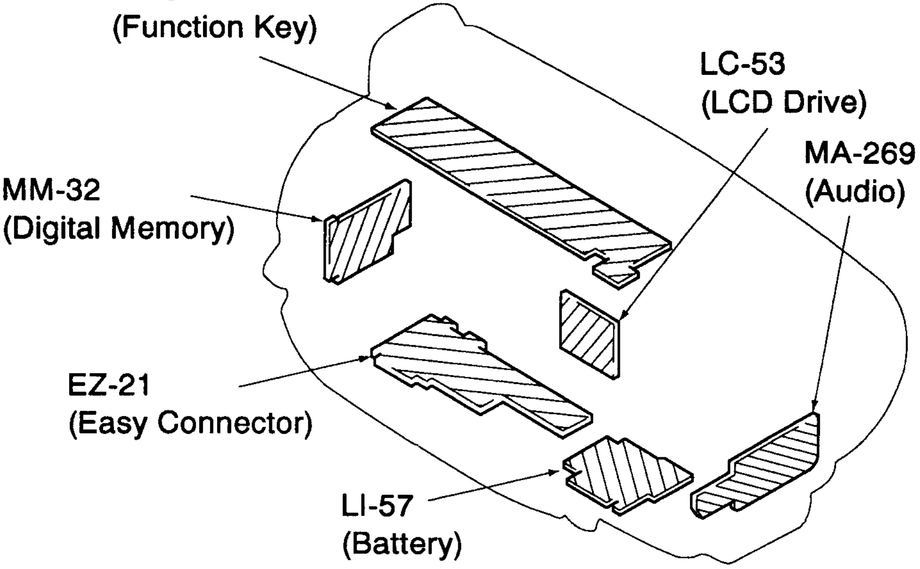
### — Right side —

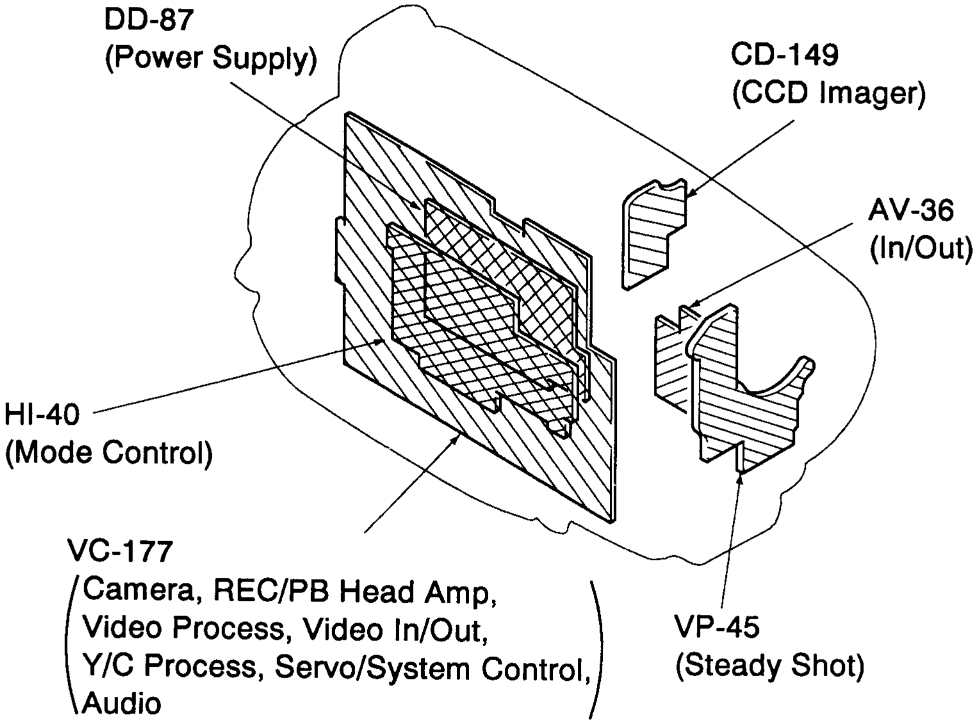

M905
Focus motor unit
3-709-111-01
VAP unit
3-709-109-01
Main tube mirror unit
(Including M904, M905, M906)
3-709-110-01
M906
Zoom motor
(Not supplied individually)
M904
IRIS meter
(Not supplied individually)

## 2-17. CIRCUIT BOARDS LOCATION


Viewfinder
VF-104
(B/W EVF)


Viewfinder
VF-96
(Color EVF)
VF-95
(Color EVF)
LB-45
(Back Light)

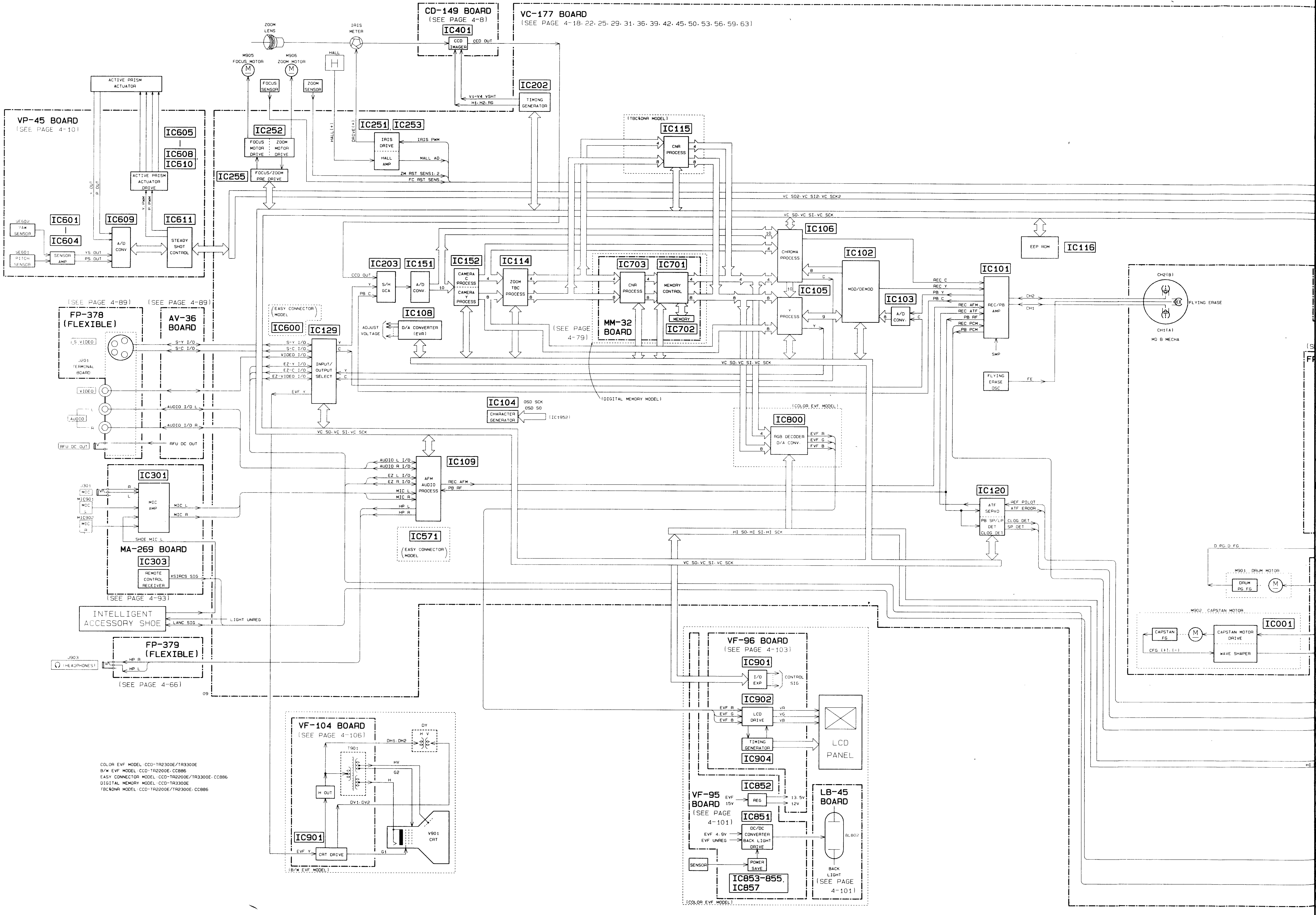

FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)


DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
(Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio)
VP-45
(Steady Shot)

# SECTION 3
# BLOCK DIAGRAMS

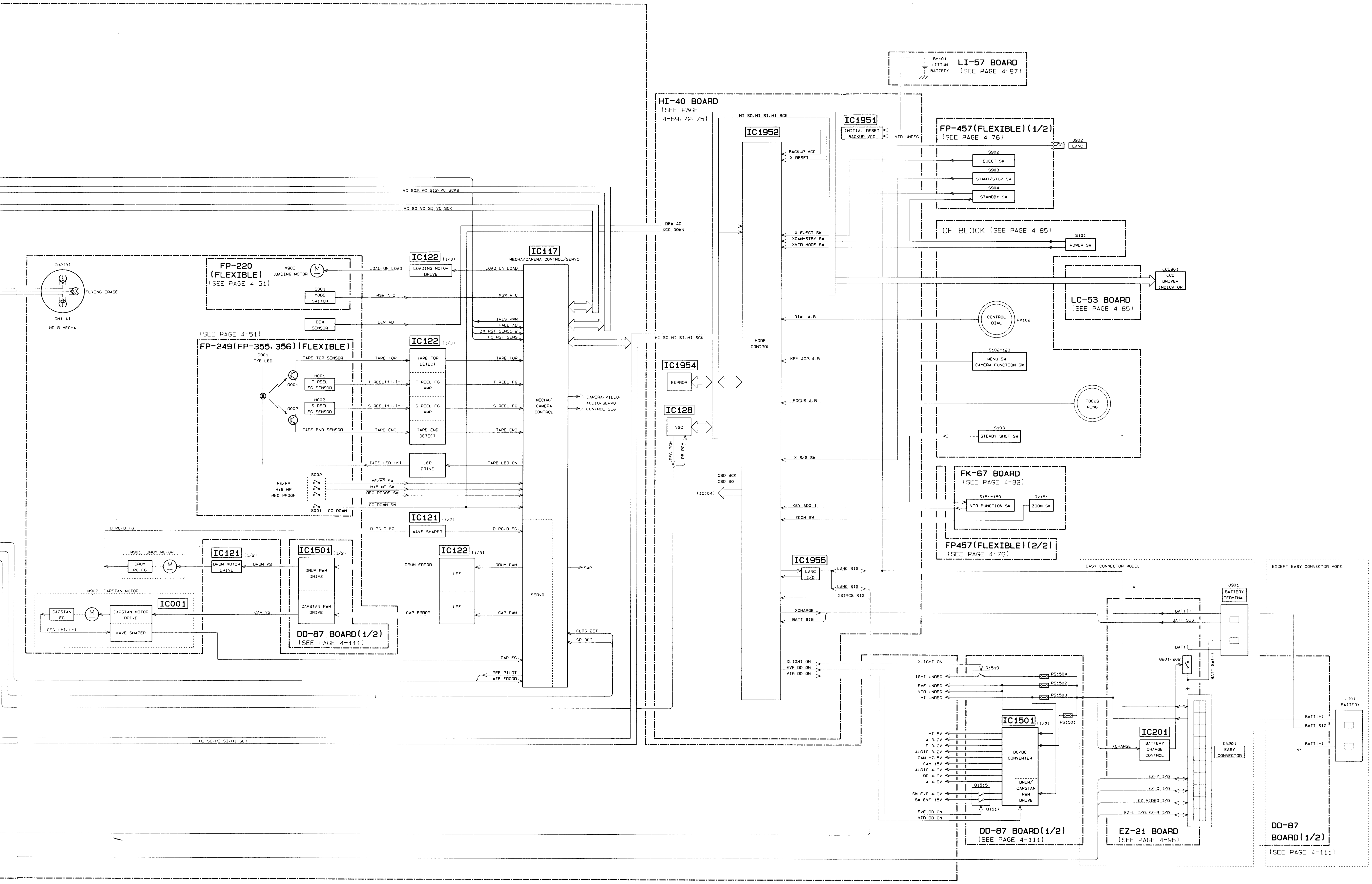
## 3-1. OVERALL BLOCK DIAGRAM

Refer to page 2 as Table for distinction functions of models and classification.

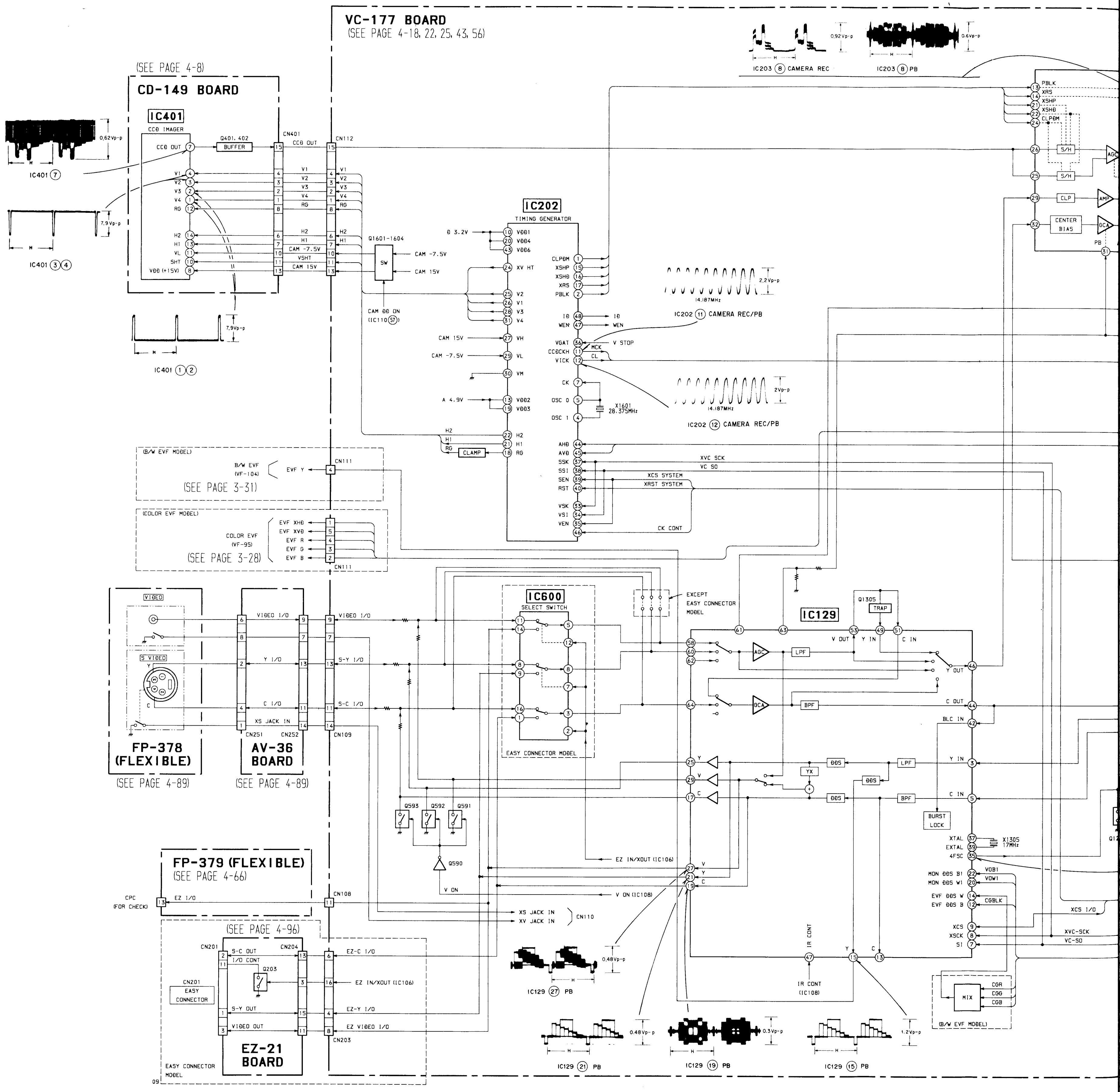


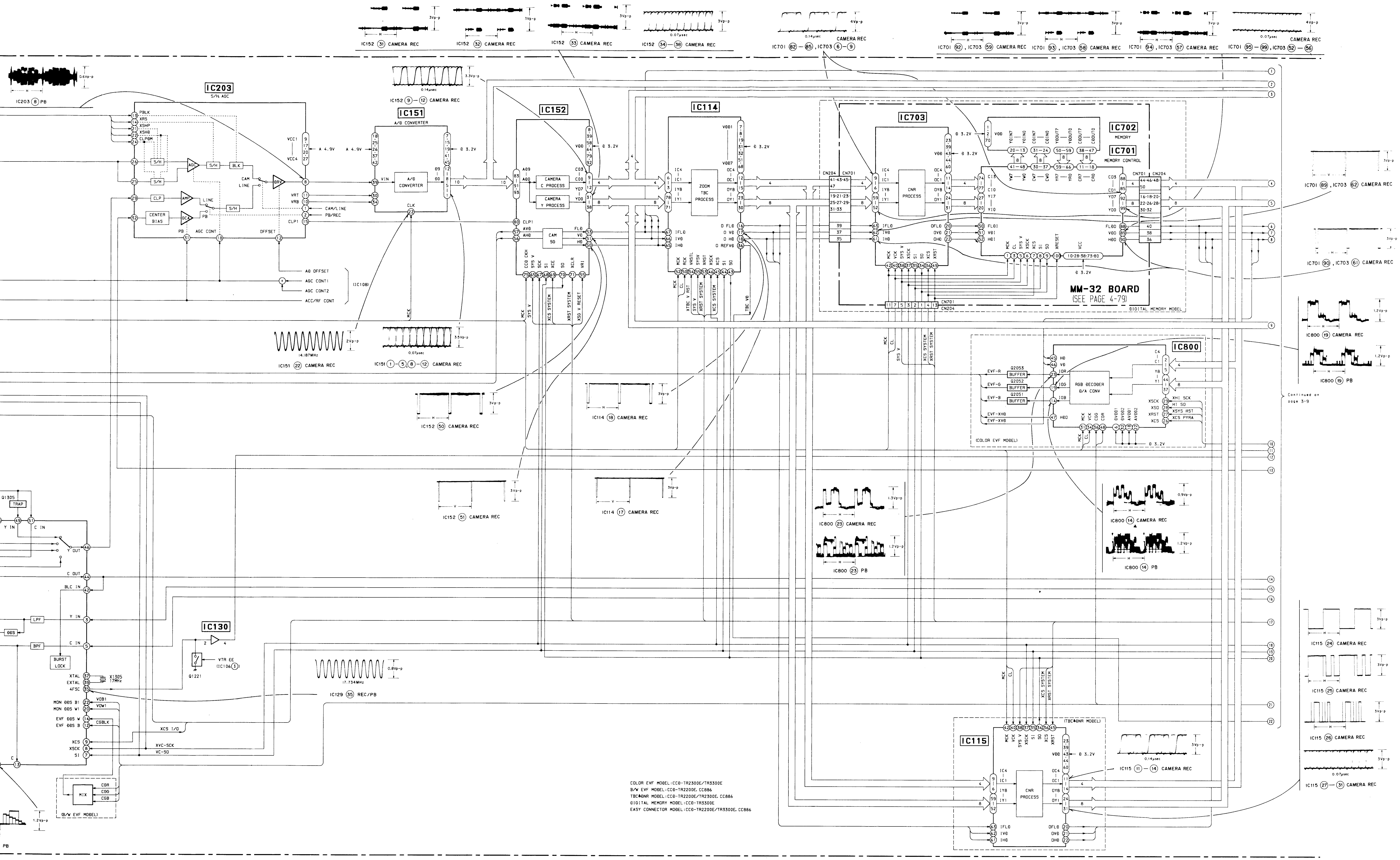
CD-149 BOARD
(SEE PAGE 4-8)
IC401
CCD IMAGER
CCD OUT
VC-177 BOARD
(SEE PAGE 4-18, 22, 25, 29, 31, 36, 39, 42, 45, 50, 53, 56, 59, 63)
ZOOM LENS
IRIS METER
M905 FOCUS MOTOR
M906 ZOOM MOTOR
HALL
FOCUS SENSOR
ZOOM SENSOR
V1-V4 VSHT
H1, H2, RG
IC202
TIMING GENERATOR
ACTIVE PRISM ACTUATOR
VP-45 BOARD
(SEE PAGE 4-10)
IC605
IC608
IC610
ACTIVE PRISM ACTUATOR DRIVE
Y OUT
P OUT
Y PWM
P PWM
IC601
IC604
IC609
IC611
YAW SENSOR
PITCH SENSOR
SENSOR AMP
YS OUT
PS OUT
A/D CONV
STEADY SHOT CONTROL
IC252
FOCUS MOTOR DRIVE
ZOOM MOTOR DRIVE
IC255
FOCUS/ZOOM PRE DRIVE
IC251
IC253
IRIS DRIVE
HALL AMP
IRIS PWM
HALL AD
ZM RST SENS1, 2
FC RST SENS
HALL(+)
DRIVE(+)
(TBC&DNR MODEL)
IC115
CNR PROCESS
VC SO2, VC SI2, VC SCK2
VC SO, VC SI, VC SCK
IC106
CHROMA PROCESS
EEP ROM
IC116
IC102
MOD/DEMOD
IC101
REC/PB AMP
REC C
REC Y
PB Y
PB C
REC AFM
REC ATF
PB RF
REC PCM
PB PCM
CH2
CH1
CH2(B)
CH1(A)
FLYING ERASE
MD B MECHA
IC203
IC151
S/H GCA
A/D CONV.
CCD OUT
IC152
CAMERA C PROCESS
CAMERA Y PROCESS
IC114
ZOOM TBC PROCESS
IC703
IC701
CNR PROCESS
MEMORY CONTROL
MEMORY
IC702
MM-32 BOARD
(SEE PAGE 4-79)
(DIGITAL MEMORY MODEL)
IC105
Y PROCESS
IC103
A/D CONV.
SWP
FLYING ERASE OSC
FE
IC108
D/A CONVERTER (EVR)
ADJUST VOLTAGE
(EASY CONNECTOR MODEL)
IC600
IC129
INPUT/OUTPUT SELECT
S-Y I/O
S-C I/O
VIDEO I/O
EZ-Y I/O
EZ-C I/O
EZ-VIDEO I/O
EVF Y
(SEE PAGE 4-89)
FP-378 (FLEXIBLE)
AV-36 BOARD
S VIDEO
J901 TERMINAL BOARD
VIDEO
AUDIO
AUDIO I/O L
AUDIO I/O R
RFU DC OUT
IC104
CHARACTER GENERATOR
OSD SCK
OSD SO
(IC1952)
(COLOR EVF MODEL)
IC800
RGB DECODER D/A CONV.
EVF R
EVF G
EVF B
IC109
AFM AUDIO PROCESS
AUDIO L I/O
AUDIO R I/O
EZ L I/O
EZ R I/O
MIC L
MIC R
HP L
HP R
REC AFM
PB RF
IC571
(EASY CONNECTOR MODEL)
IC120
ATF SERVO
PB SP/LP DET
CLOG DET
REF PILOT
ATF ERROR
SP DET
HI SO, HI SI, HI SCK
IC301
MIC AMP
J301 MIC
MIC901
MIC902
SHOE MIC L
MA-269 BOARD
IC303
REMOTE CONTROL RECEIVER
XSIRCS SIG
(SEE PAGE 4-93)
INTELLIGENT ACCESSORY SHOE
LANC SIG
LIGHT UNREG
FP-379 (FLEXIBLE)
J903
HEADPHONES
HP R
HP L
(SEE PAGE 4-66)
D PG, D FG
M901 DRUM MOTOR
DRUM PG FG
M902 CAPSTAN MOTOR
CAPSTAN FG
CAPSTAN MOTOR DRIVE
WAVE SHAPER
IC001
CFG (+), (-)
VF-96 BOARD
(SEE PAGE 4-103)
IC901
I/O EXP
CONTROL SIG
IC902
LCD DRIVE
VR
VG
VB
TIMING GENERATOR
IC904
LCD PANEL
IC852
REG
13.5V
12V
VF-95 BOARD
(SEE PAGE 4-101)
EVF 15V
IC851
DC/DC CONVERTER BACK LIGHT DRIVE
EVF 4.9V
EVF UNREG
SENSOR
POWER SAVE
IC853-855, IC857
LB-45 BOARD
BACK LIGHT
(SEE PAGE 4-101)
(COLOR EVF MODEL)
VF-104 BOARD
(SEE PAGE 4-106)
DY
T901
DH1, DH2
HV
G2
H
H OUT
DV1, DV2
IC901
CRT DRIVE
EVF Y
G1
V901 CRT
(B/W EVF MODEL)

COLOR EVF MODEL : CCD-TR2300E/TR3300E
B/W EVF MODEL : CCD-TR2200E, CC886
EASY CONNECTOR MODEL : CCD-TR2200E/TR3300E, CC886
DIGITAL MEMORY MODEL : CCD-TR3300E
TBC&DNR MODEL : CCD-TR2200E/TR2300E, CC886


VC SO2·VC SI2·VC SCK2
VC SO·VC SI·VC SCK
CH2(B)
FLYING ERASE
CH1(A)
MD B MECHA
FP-220
(FLEXIBLE)
(SEE PAGE 4-51)
M903
LOADING MOTOR
M
S001
MODE
SWITCH
DEW
SENSOR
LOAD·UN LOAD
MSW A-C
DEW AD
IC122 (1/3)
LOADING MOTOR
DRIVE
IC117
MECHA/CAMERA CONTROL/SERVO
LOAD·UN LOAD
MSW A-C
IRIS PWM
HALL AD
ZM RST SENS1,2
FC RST SENS
(SEE PAGE 4-51)
FP-249(FP-355,356)(FLEXIBLE)
D001
T/E LED
TAPE TOP SENSOR
H001
T REEL
FG SENSOR
Q001
H002
S REEL
FG SENSOR
Q002
TAPE END SENSOR
TAPE TOP
T REEL(+),(-)
S REEL(+),(-)
TAPE END
IC122 (1/3)
TAPE TOP
DETECT
T REEL FG
AMP
S REEL FG
AMP
TAPE END
DETECT
TAPE TOP
T REEL FG
S REEL FG
TAPE END
MECHA/
CAMERA
CONTROL
CAMERA·VIDEO·
AUDIO·SERVO
CONTROL SIG
TAPE LED (K)
LED
DRIVE
TAPE LED ON
S002
ME/MP
Hi8 MP
REC PROOF
ME/MP SW
Hi8 MP SW
REC PROOF SW
S001 CC DOWN
CC DOWN SW
D PG·D FG
IC121 (1/2)
WAVE SHAPER
D PG·D FG
D PG·D FG
M901 DRUM MOTOR
DRUM
PG FG
M
IC121 (1/2)
DRUM MOTOR
DRIVE
DRUM VS
IC1501 (1/2)
DRUM PWM
DRIVE
CAPSTAN PWM
DRIVE
DRUM ERROR
IC122 (1/3)
LPF
LPF
DRUM PWM
SWP
M902 CAPSTAN MOTOR
CAPSTAN
FG
M
IC001
CAPSTAN MOTOR
DRIVE
WAVE SHAPER
CFG (+),(-)
CAP VS
CAP ERROR
CAP PWM
SERVO
DD-87 BOARD(1/2)
(SEE PAGE 4-111)
CLOG DET
SP DET
CAP FG
REF PILOT
ATF ERROR
HI SO·HI SI·HI SCK
LI-57 BOARD
(SEE PAGE 4-87)
BH101
LITIUM
BATTERY
HI-40 BOARD
(SEE PAGE
4-69,72,75)
HI SO·HI SI·HI SCK
IC1951
INITIAL RESET
BACKUP VCC
VTR UNREG
IC1952
BACKUP VCC
X RESET
DEW AD
XCC DOWN
X EJECT SW
XCAM+STBY SW
XVTR MODE SW
FP-457(FLEXIBLE)(1/2)
(SEE PAGE 4-76)
J902
LANC
S902
EJECT SW
S903
START/STOP SW
S904
STANDBY SW
CF BLOCK (SEE PAGE 4-85)
S101
POWER SW
LCD901
LCD
DRIVER
INDICATOR
LC-53 BOARD
(SEE PAGE 4-85)
DIAL A,B
CONTROL
DIAL
RV102
HI SO·HI SI·HI SCK
MODE
CONTROL
KEY AD2,4,5
S102-123
MENU SW
CAMERA FUNCTION SW
IC1954
EEPROM
FOCUS A,B
FOCUS
RING
IC128
VSC
REC PCM
PB PCM
S103
STEADY SHOT SW
X S/S SW
FK-67 BOARD
(SEE PAGE 4-82)
OSD SCK
OSD SO
(IC104)
S151-159
VTR FUNCTION SW
RV151
ZOOM SW
KEY AD0,1
ZOOM SW
FP457(FLEXIBLE)(2/2)
(SEE PAGE 4-76)
IC1955
LANC
I/O
LANC SIG
LANC SIG
XSIRCS SIG
XCHARGE
BATT SIG
XLIGHT ON
EVF DD ON
VTR DD ON
XLIGHT ON
Q1519
LIGHT UNREG
EVF UNREG
VTR UNREG
MT UNREG
PS1504
PS1502
PS1503
PS1501
IC1501 (1/2)
MT 5V
A 3.2V
D 3.2V
AUDIO 3.2V
CAM -7.5V
CAM 15V
AUDIO 4.9V
RP 4.9V
A 4.9V
DC/DC
CONVERTER
Q1515
SW EVF 4.9V
SW EVF 15V
DRUM/
CAPSTAN
PWM
DRIVE
Q1517
EVF DD ON
VTR DD ON
DD-87 BOARD(1/2)
(SEE PAGE 4-111)
EASY CONNECTOR MODEL
J901
BATTERY
TERMINAL
BATT(+)
BATT SIG
BATT(-)
Q201,202
BATT SW(-)
IC201
BATTERY
CHARGE
CONTROL
XCHARGE
CN201
EASY
CONNECTOR
EZ-Y I/O
EZ-C I/O
EZ VIDEO I/O
EZ-L I/O·EZ-R I/O
EZ-21 BOARD
(SEE PAGE 4-96)
EXCEPT EASY CONNECTOR MODEL
J901
BATTERY
BATT(+)
BATT SIG
BATT(-)
DD-87
BOARD(1/2)
(SEE PAGE 4-111)

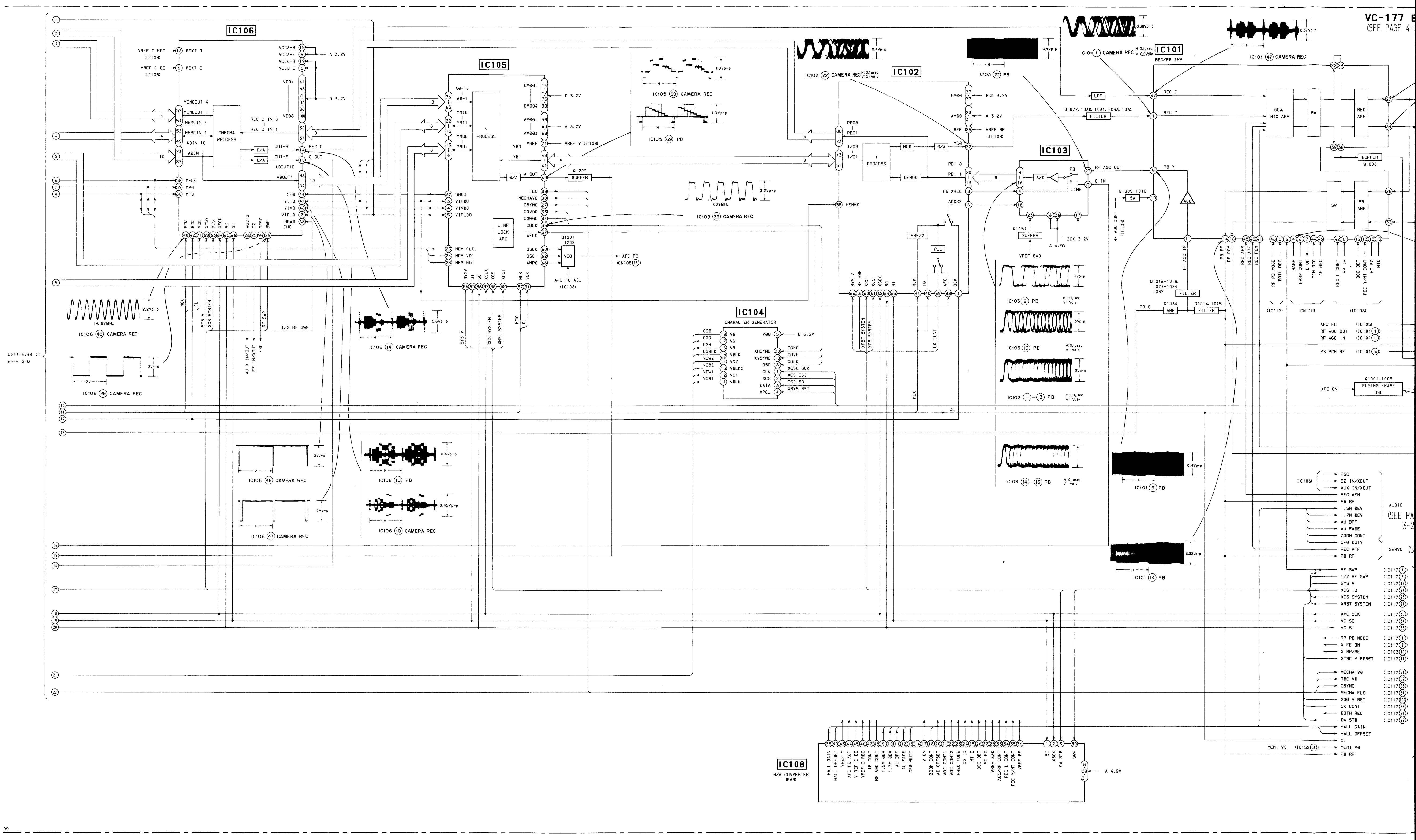
## 3-2. CAMERA/VIDEO BLOCK DIAGRAM (1)


VC-177 BOARD
(SEE PAGE 4-18, 22, 25, 43, 56)
(SEE PAGE 4-8)
CD-149 BOARD
IC401
CCD IMAGER
Q401, 402 BUFFER
IC401 ⑦
IC401 ③④
IC401 ①②
CN401
CN112
IC202
TIMING GENERATOR
Q1601-1604
SW
CAM -7.5V
CAM 15V
CAM DD ON (IC110 ㊲)
X1601 28.375MHz
IC202 ⑪ CAMERA REC/PB
IC202 ⑫ CAMERA REC/PB
IC203 ⑧ CAMERA REC
IC203 ⑧ PB
(B/W EVF MODEL)
B/W EVF (VF-104)
(SEE PAGE 3-31)
(COLOR EVF MODEL)
COLOR EVF (VF-95)
(SEE PAGE 3-28)
CN111
IC600
SELECT SWITCH
EASY CONNECTOR MODEL
EXCEPT EASY CONNECTOR MODEL
IC129
Q1305 TRAP
X1305 17MHz
FP-378 (FLEXIBLE)
(SEE PAGE 4-89)
AV-36 BOARD
(SEE PAGE 4-89)
CN251
CN252
CN109
Q593
Q592
Q591
Q590
FP-379 (FLEXIBLE)
(SEE PAGE 4-66)
CPC (FOR CHECK)
CN108
CN110
(SEE PAGE 4-96)
CN201 EASY CONNECTOR
EZ-21 BOARD
CN203
CN204
IC129 ㉗ PB
IC129 ㉑ PB
IC129 ⑲ PB
IC129 ⑮ PB
(B/W EVF MODEL)
MIX

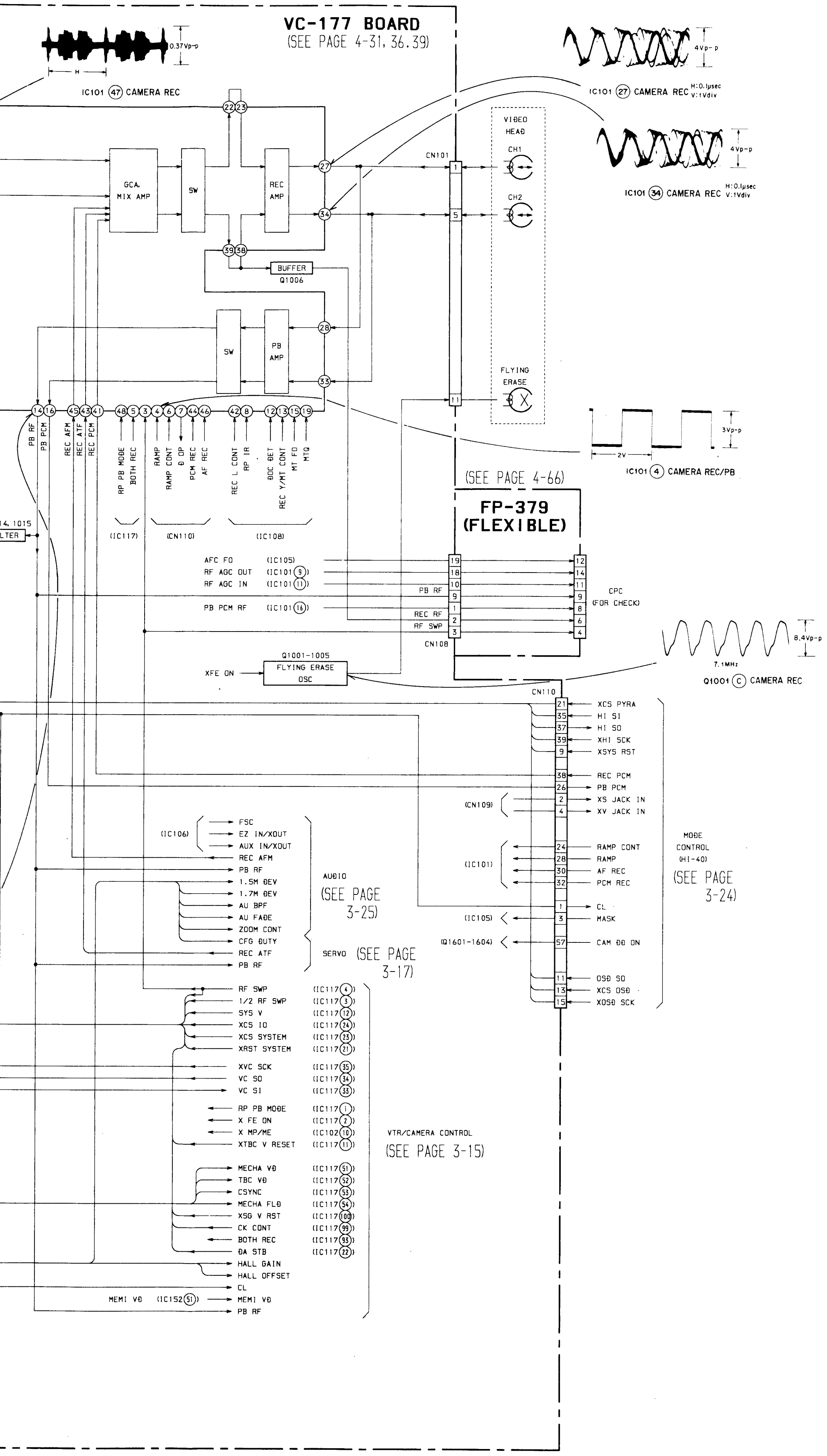

IC203 (8) PB
0.6Vp-p
IC203
S/H AGC
PBLK
XRS
XSHP
XSHD
CLPDM
S/H
AGC
BLK
CLP
AMP
CENTER BIAS
GCA
BRT
CAM
LINE
VCC1
VCC4
A 4.9V
VRT
VRB
CAM/LINE
PB/REC
CLP1
AGC CONT
OFFSET
AD OFFSET
AGC CONT1
AGC CONT2
ACC/RF CONT
(IC108)
IC151
A/D CONVERTER
VIN
A/D CONVERTER
D9
D0
D 3.2V
CLK
IC152 (9)-(12) CAMERA REC
3.3Vp-p
0.14μsec
IC152 (31) CAMERA REC
IC152 (32) CAMERA REC
IC152 (33) CAMERA REC
IC152 (34)-(38) CAMERA REC
0.07μsec
3Vp-p
IC152
AD9
AD0
CAMERA C PROCESS
CAMERA Y PROCESS
CO9
CO0
YO7
YO0
CLP1
AVD
AHD
CAM SG
FLD
VD
HD
CCD CKH
SYS V
SCK
SI
XCE
SO
XCLR
VRI
MCK
XCS SYSTEM
XRST SYSTEM
XSG V RESET
IC114
ZOOM TBC PROCESS
IC4
IC1
IY8
IY1
VDD1
VDD7
OC4
OC1
OY8
OY1
D 3.2V
IFLD
IVD
IHD
D FLD
O VD
O HD
O REFVD
MCK
CL
VRSTL
SYSV
XRST
XSCK
XCS
SI
SO
XTBC V RST
TBC VD
IC703
CNR PROCESS
IC702
MEMORY
IC701
MEMORY CONTROL
VDD
YDIN7
YDIN0
CDIN7
CDIN0
YDOUT7
YDOUT0
CDOUT7
CDOUT0
YW7
YW0
CW7
CW0
YR7
YR0
CR7
CR0
CI3
CI0
YI7
YI0
CO3
CO1
YO7
YO0
FLDI
VDI
HDI
FLDO
VDO
HDO
MCK
CL
SYS V
XSCK
XCS
SI
SO
XRESET
VCC
D 3.2V
CN204
CN701
MM-32 BOARD
(SEE PAGE 4-79)
DIGITAL MEMORY MODEL
IC701 (82)-(85), IC703 (6)-(9) CAMERA REC
0.14μsec
4Vp-p
IC701 (92), IC703 (59) CAMERA REC
IC701 (93), IC703 (58) CAMERA REC
IC701 (94), IC703 (57) CAMERA REC
IC701 (95)-(99), IC703 (52)-(56) CAMERA REC
IC701 (89), IC703 (62) CAMERA REC
IC701 (90), IC703 (61) CAMERA REC
IC151 (22) CAMERA REC
14.187MHz
2Vp-p
IC151 (1)-(5), (8)-(12) CAMERA REC
3.5Vp-p
IC152 (50) CAMERA REC
IC114 (18) CAMERA REC
IC152 (51) CAMERA REC
IC114 (17) CAMERA REC
IC800
RGB DECODER D/A CONV
EVF-R
EVF-G
EVF-B
EVF-XHD
EVF-XVD
Q2053 BUFFER
Q2052 BUFFER
Q2051 BUFFER
HD
VD
IOR
IOG
IOB
XSCK
XSO
XRST
XCS
XHI SCK
HI SO
XSYS RST
XCS PYRA
(COLOR EVF MODEL)
IC800 (19) CAMERA REC
IC800 (19) PB
1.2Vp-p
Continued on page 3-9
IC800 (23) CAMERA REC
IC800 (23) PB
1.3Vp-p
IC800 (14) CAMERA REC
IC800 (14) PB
0.9Vp-p
Q1305
TRAP
Y IN
C IN
Y OUT
C OUT
BLC IN
LPF
BPF
DDS
BURST LOCK
XTAL
EXTAL
4FSC
X1305 17MHz
MON DDS B1
MON DDS W1
EVF DDS W
EVF DDS B
VDB1
VDW1
CGBLK
XCS
XSCK
SI
XCS I/O
XVC-SCK
VC-SO
MIX
CDR
CDG
CDB
(B/W EVF MODEL)
IC130
VTR EE (IC106 (3))
Q1221
IC129 (35) REC/PB
17.734MHz
0.8Vp-p
IC115
(TBC&DNR MODEL)
CNR PROCESS
IFLD
IVD
IHD
OFLD
OVD
OHD
IC115 (11)-(14) CAMERA REC
IC115 (24) CAMERA REC
IC115 (25) CAMERA REC
IC115 (26) CAMERA REC
IC115 (27)-(31) CAMERA REC

COLOR EVF MODEL:CCD-TR2300E/TR3300E
B/W EVF MODEL:CCD-TR2200E, CC886
TBC&DNR MODEL:CCD-TR2200E/TR2300E, CC886
DIGITAL MEMORY MODEL:CCD-TR3300E
EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E, CC886

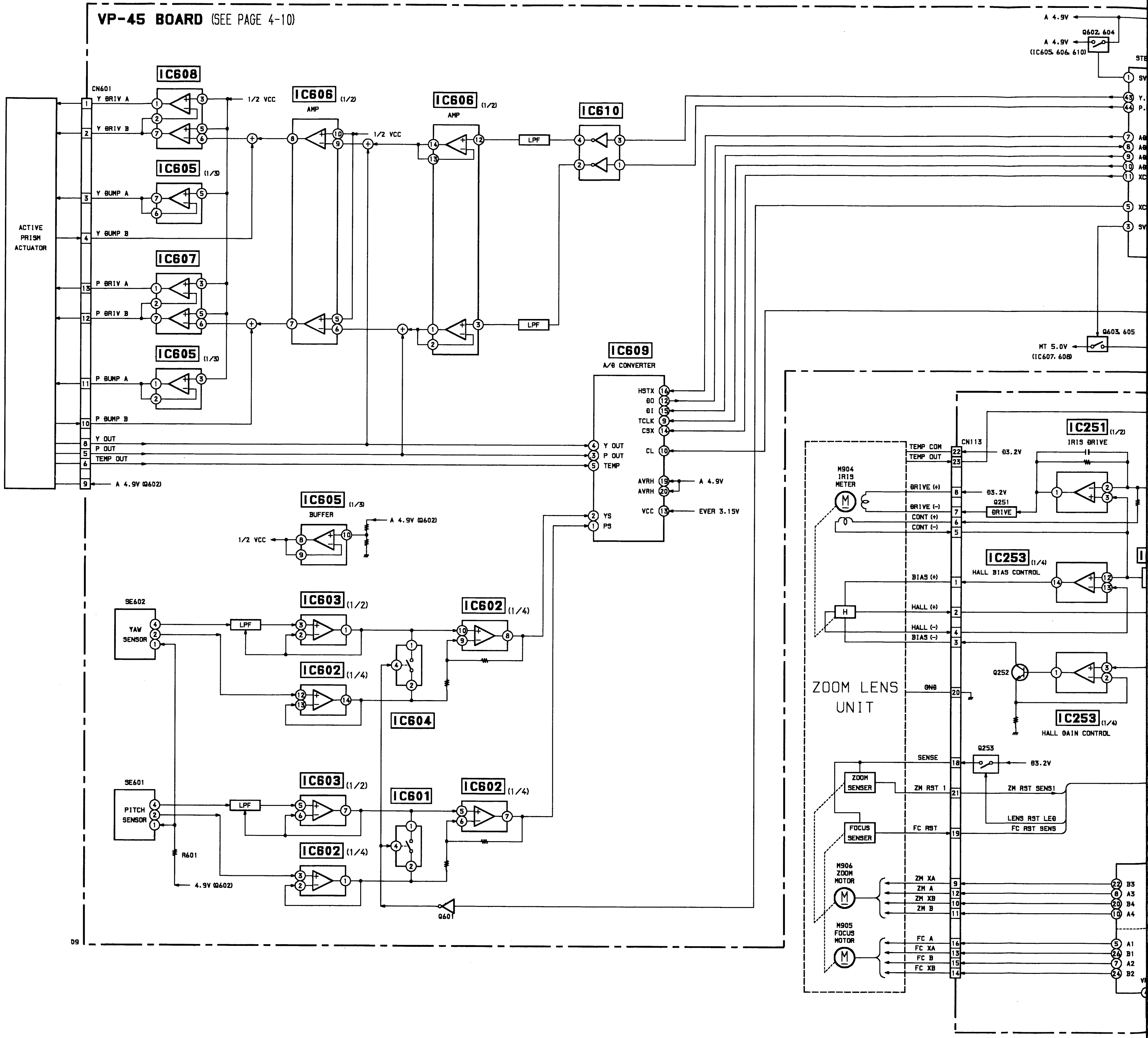
## CAMERA/VIDEO BLOCK DIAGRAM( 2)

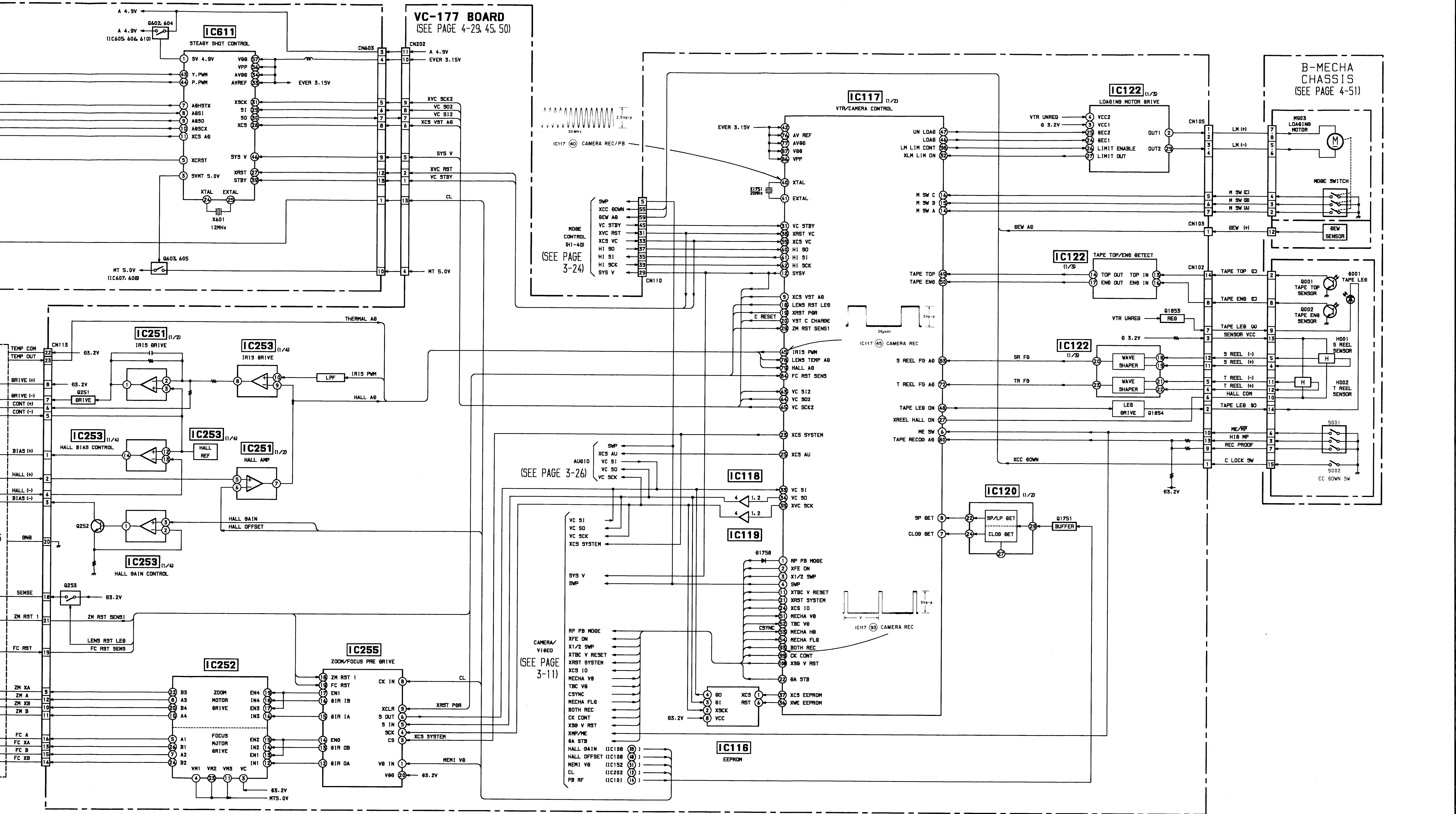


VC-177
(SEE PAGE 4-
IC106
VREF C REC (IC108)
VREF C EE (IC108)
REXT R
REXT E
VCCA-R
VCCA-E
VCCD-R
VCCD-E
A 3.2V
VDD1
VDD6
D 3.2V
MEMCOUT 4
MEMCOUT 1
MEMCIN 4
MEMCIN 1
ADIN 10
ADIN 1
CHROMA PROCESS
REC C IN 8
REC C IN 1
D/A
OUT-R
OUT-E
REC C
C OUT
ADOUT10
ADOUT1
MFL0
MV0
MH0
SH0
VIH0
VIV0
VIFL0
HEAD CHG
MCK
BCK
SYSV
XCS
XSCK
SO
SI
AUDIO
EZ
DFSC
SWP
IC105
A0-10
A0-1
YM18
YM11
YM08
YM01
Y PROCESS
DVDD1
DVDD4
AVDD1
AVDD3
VREF
VREF Y (IC108)
YB9
YB1
A OUT
Q1203 BUFFER
FL0
MECHAVD
CSYNC
CDVDD
CDHDD
CDCK
AFCO
LINE LOCK AFC
DSCO
DSCI
AMPO
VCO
Q1201, 1202
AFC FO ADJ (IC108)
AFC FO (CN108 ⑲)
MEM FL01
MEM V01
MEM H01
IC105 ⑥⑨ CAMERA REC
IC105 ⑥⑨ PB
IC105 ㉟ CAMERA REC
7.09MHz
IC104
CHARACTER GENERATOR
CGB
CGG
CGR
CGBLK
VOW2
VOB2
VOW1
VOB1
VB
VG
VR
VBLK
VC2
VBLK2
VC1
VBLK1
VDD
XHSYNC
XVSYNC
OSC
CLK
XCS
DATA
XPCL
CDHD
CDVD
CDCK
XOSD SCK
XCS OSD
OSD SO
XSYS RST
IC102
IC102 ㉒ CAMERA REC
PBD8
PBD1
I/O9
I/O1
Y PROCESS
MOD
DEMOD
D/A
DVDD
AVDD
REF
VREF RF (IC108)
BCK 3.2V
A 3.2V
PBI 8
PBI 1
PB XREC
ADCK2
MEMHD
FRF/2
PLL
AFC
XRST SYSTEM
XCS SYSTEM
CK CONT
IC103
IC103 ㉗ PB
A/D
RF AGC OUT
C IN
LINE
Q1151 BUFFER
VREF BAD
A 4.9V
BCK 3.2V
IC103 ⑨ PB
IC103 ⑩ PB
IC103 ⑪-⑬ PB
IC103 ⑭-⑯ PB
IC101
IC101 ① CAMERA REC
IC101 ④⑦ CAMERA REC
REC/PB AMP
LPF
FILTER
Q1027, 1030, 1031, 1033, 1035
REC C
REC Y
GCA MIX AMP
SW
REC AMP
BUFFER Q1006
PB AMP
PB Y
AGC
Q1009, 1010
SW
RF AGC CONT (IC108)
RF AGC IN
Q1016-1019, 1021-1024, 1037
FILTER
Q1034 AMP
Q1014, 1015 FILTER
PB C
IC101 ⑨ PB
IC101 ⑭ PB
PB RF
PB PCM
REC AFM
REC ATF
REC PCM
RP PB MODE
BOTH REC
RAMP
RAMP CONT
D OFF
PCM REC
AF REC
REC L CONT
RP IR
DOC DET
REC Y/MT CONT
MT FO
MTQ
(IC117)
(CN110)
(IC108)
AFC FO (IC105)
RF AGC OUT (IC101 ⑨)
RF AGC IN (IC101 ⑪)
PB PCM RF (IC101 ⑯)
Q1001-1005
FLYING ERASE OSC
XFE ON
IC106 ④⓪ CAMERA REC
14.187MHz
IC106 ㉙ CAMERA REC
IC106 ⑭ CAMERA REC
IC106 ④⑥ CAMERA REC
IC106 ④⑦ CAMERA REC
IC106 ⑩ PB
IC106 ⑩ CAMERA REC
1/2 RF SWP
SYS V
XCS SYSTEM
XRST SYSTEM
AUX IN/XOUT
EZ IN/XOUT
FSC
RF SWP
CL
Continued on page 3-8
(IC106)
FSC
EZ IN/XOUT
AUX IN/XOUT
REC AFM
PB RF
1.5M DEV
1.7M DEV
AU BPF
AU FADE
ZOOM CONT
CFG DUTY
REC ATF
PB RF
AUDIO
(SEE PA 3-2
SERVO
RF SWP (IC117④)
1/2 RF SWP (IC117③)
SYS V (IC117⑫)
XCS 10 (IC117⑦④)
XCS SYSTEM (IC117②③)
XRST SYSTEM (IC117②①)
XVC SCK (IC117③⑤)
VC SO (IC117③④)
VC SI (IC117③③)
RP PB MODE (IC117①)
X FE ON (IC117②)
X MP/ME (IC102⑩)
XTBC V RESET (IC117⑪)
MECHA VD (IC117⑤①)
TBC VD (IC117⑤②)
CSYNC (IC117⑤③)
MECHA FLD (IC117⑤④)
XSG V RST (IC117⑩⑩)
CK CONT (IC117⑨⑨)
BOTH REC (IC117⑨⑧)
DA STB (IC117②②)
HALL GAIN
HALL OFFSET
CL
MEMI VD (IC152⑤①)
MEMI VD
PB RF
IC108
D/A CONVERTER (EVR)
HALL GAIN
HALL OFFSET
VREF Y
AFC FO ADJ
V REF C EE
VREF C REC
IR CONT
RF AGC CONT
1.5M DEV
1.7M DEV
AU BPF
AU FADE
CFG DUTY
V ON
ZOOM CONT
AD OFFSET
AGC CONT1
AGC CONT2
FREQ TUNE
RP IR
MT IO
DOC DET
MT FO
VREF BAD
ACC/MF CONT
REC L CONT
REC Y/MT CONT
VREF RF
SI
XSCK
DA STB
SWP
A 4.9V

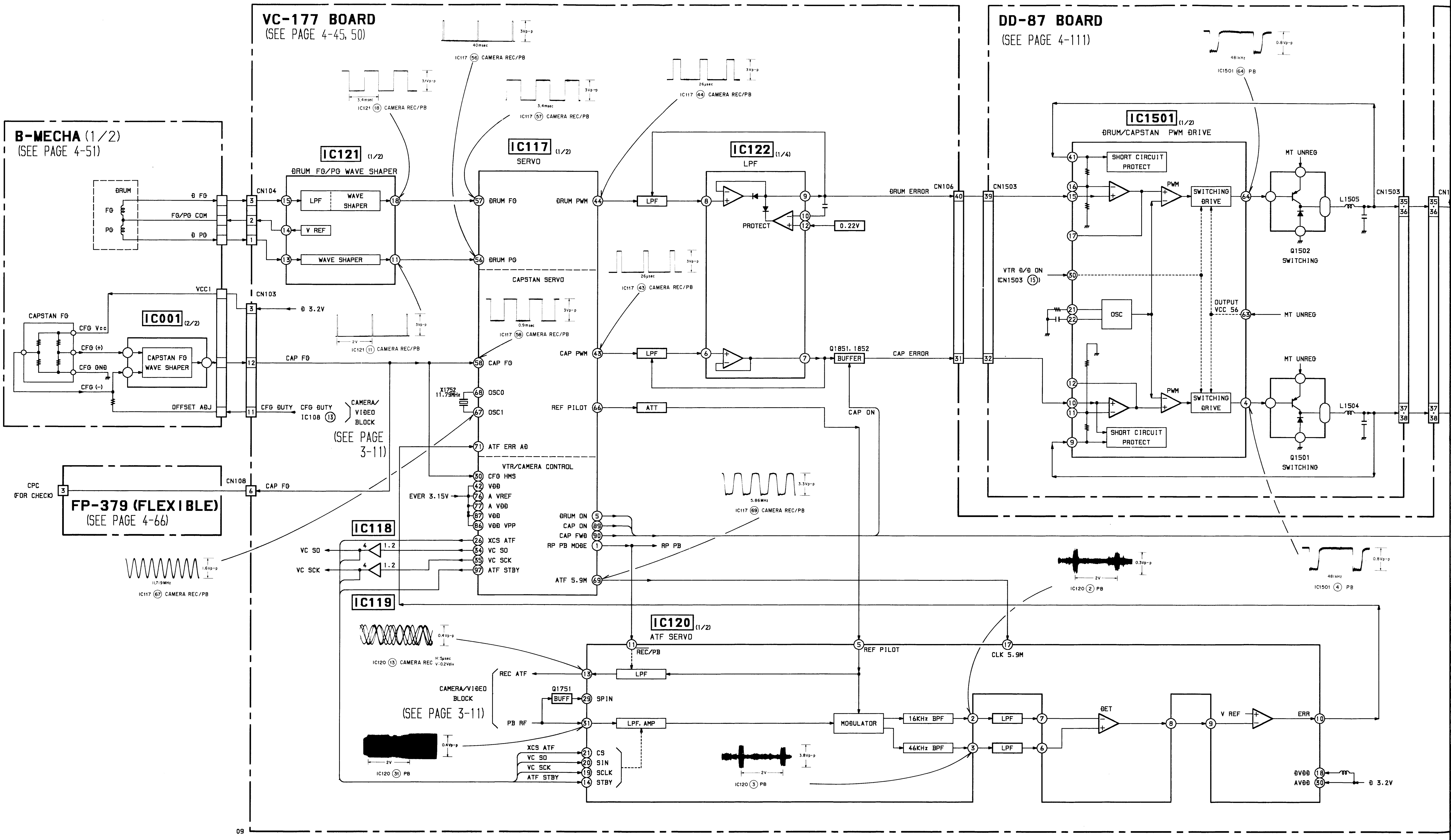

VC-177 BOARD
(SEE PAGE 4-31, 36.39)
0.37Vp-p
H
IC101 (47) CAMERA REC
4Vp-p
IC101 (27) CAMERA REC H:0.1μsec V:1Vdiv
4Vp-p
IC101 (34) CAMERA REC H:0.1μsec V:1Vdiv
GCA. MIX AMP
SW
REC AMP
BUFFER
Q1006
SW
PB AMP
CN101
VIDEO HEAD
CH1
CH2
FLYING ERASE
3Vp-p
2V
IC101 (4) CAMERA REC/PB
PB RF
PB PCM
REC AFM
REC ATF
REC PCM
RP PB MODE
BOTH REC
RAMP
RAMP CONT
D OP
PCM REC
AF REC
REC L CONT
RP IR
DOC DET
REC Y/MT CONT
MT FO
MTQ
(IC117)
(CN110)
(IC108)
14, 1015
LTER
(SEE PAGE 4-66)
FP-379 (FLEXIBLE)
AFC FO (IC105)
RF AGC OUT (IC101 (9))
RF AGC IN (IC101 (11))
PB RF
PB PCM RF (IC101 (16))
REC RF
RF SWP
CN108
CPC (FOR CHECK)
8.4Vp-p
7.1MHz
Q1001 (C) CAMERA REC
Q1001-1005
FLYING ERASE OSC
XFE ON
CN110
XCS PYRA
HI SI
HI SO
XHI SCK
XSYS RST
REC PCM
PB PCM
(CN109)
XS JACK IN
XV JACK IN
(IC101)
RAMP CONT
RAMP
AF REC
PCM REC
CL
(IC105)
MASK
(Q1601-1604)
CAM DD ON
OSD SO
XCS OSD
XOSD SCK
MODE CONTROL (HI-40)
(SEE PAGE 3-24)
(IC106)
FSC
EZ IN/XOUT
AUX IN/XOUT
REC AFM
PB RF
1.5M DEV
1.7M DEV
AU BPF
AU FADE
ZOOM CONT
CFG DUTY
REC ATF
PB RF
AUDIO
(SEE PAGE 3-25)
SERVO (SEE PAGE 3-17)
RF SWP (IC117 (4))
1/2 RF SWP (IC117 (3))
SYS V (IC117 (12))
XCS IO (IC117 (24))
XCS SYSTEM (IC117 (23))
XRST SYSTEM (IC117 (21))
XVC SCK (IC117 (35))
VC SO (IC117 (34))
VC SI (IC117 (33))
RP PB MODE (IC117 (1))
X FE ON (IC117 (2))
X MP/ME (IC102 (10))
XTBC V RESET (IC117 (11))
MECHA VD (IC117 (51))
TBC VD (IC117 (52))
CSYNC (IC117 (53))
MECHA FLD (IC117 (54))
XSG V RST (IC117 (100))
CK CONT (IC117 (99))
BOTH REC (IC117 (93))
DA STB (IC117 (22))
HALL GAIN
HALL OFFSET
CL
MEMI VD (IC152 (51))
MEMI VD
PB RF
VTR/CAMERA CONTROL
(SEE PAGE 3-15)

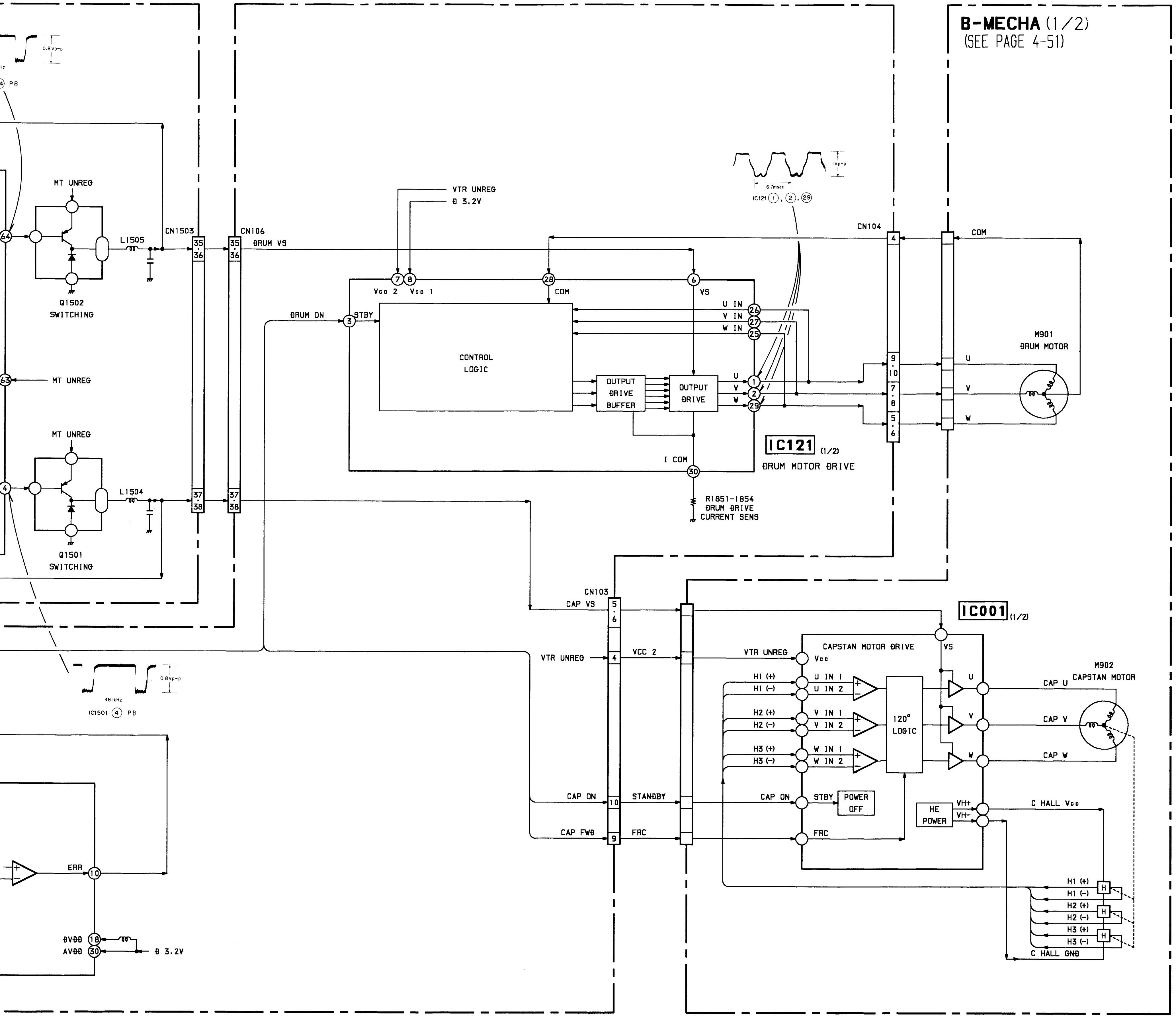
## 3-3. VTR/CAMERA CONTROL BLOCK DIAGRAM


VP-45 BOARD (SEE PAGE 4-10)
ACTIVE PRISM ACTUATOR
CN601
Y DRIV A
Y DRIV B
Y DUMP A
Y DUMP B
P DRIV A
P DRIV B
P DUMP A
P DUMP B
Y OUT
P OUT
TEMP OUT
A 4.9V (Q602)
IC608
IC605 (1/3)
IC607
IC606 (1/2)
AMP
1/2 VCC
IC610
LPF
IC609
A/D CONVERTER
HSTX
DO
DI
TCLK
CSX
CL
Y OUT
P OUT
TEMP
AVRH
AVRL
VCC
YS
PS
A 4.9V
EVER 3.15V
BUFFER
SE602
YAW SENSOR
SE601
PITCH SENSOR
R601
4.9V (Q602)
IC603 (1/2)
IC602 (1/4)
IC604
IC601
Q601
D9
A 4.9V
Q602, 604
(IC605, 606, 610)
MT 5.0V
(IC607, 608)
Q603, 605
ZOOM LENS UNIT
M904
IRIS METER
CN113
TEMP COM
TEMP OUT
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
BIAS (+)
HALL (+)
HALL (-)
BIAS (-)
GND
SENSE
ZM RST 1
FC RST
ZOOM SENSER
FOCUS SENSER
M906 ZOOM MOTOR
M905 FOCUS MOTOR
ZM XA
ZM A
ZM XB
ZM B
FC A
FC XA
FC B
FC XB
IC251 (1/2)
IRIS DRIVE
D3.2V
Q251
DRIVE
IC253 (1/4)
HALL BIAS CONTROL
Q252
HALL GAIN CONTROL
Q253
ZM RST SENS1
LENS RST LED
FC RST SENS
B3
A3
B4
A4
A1
B1
A2
B2

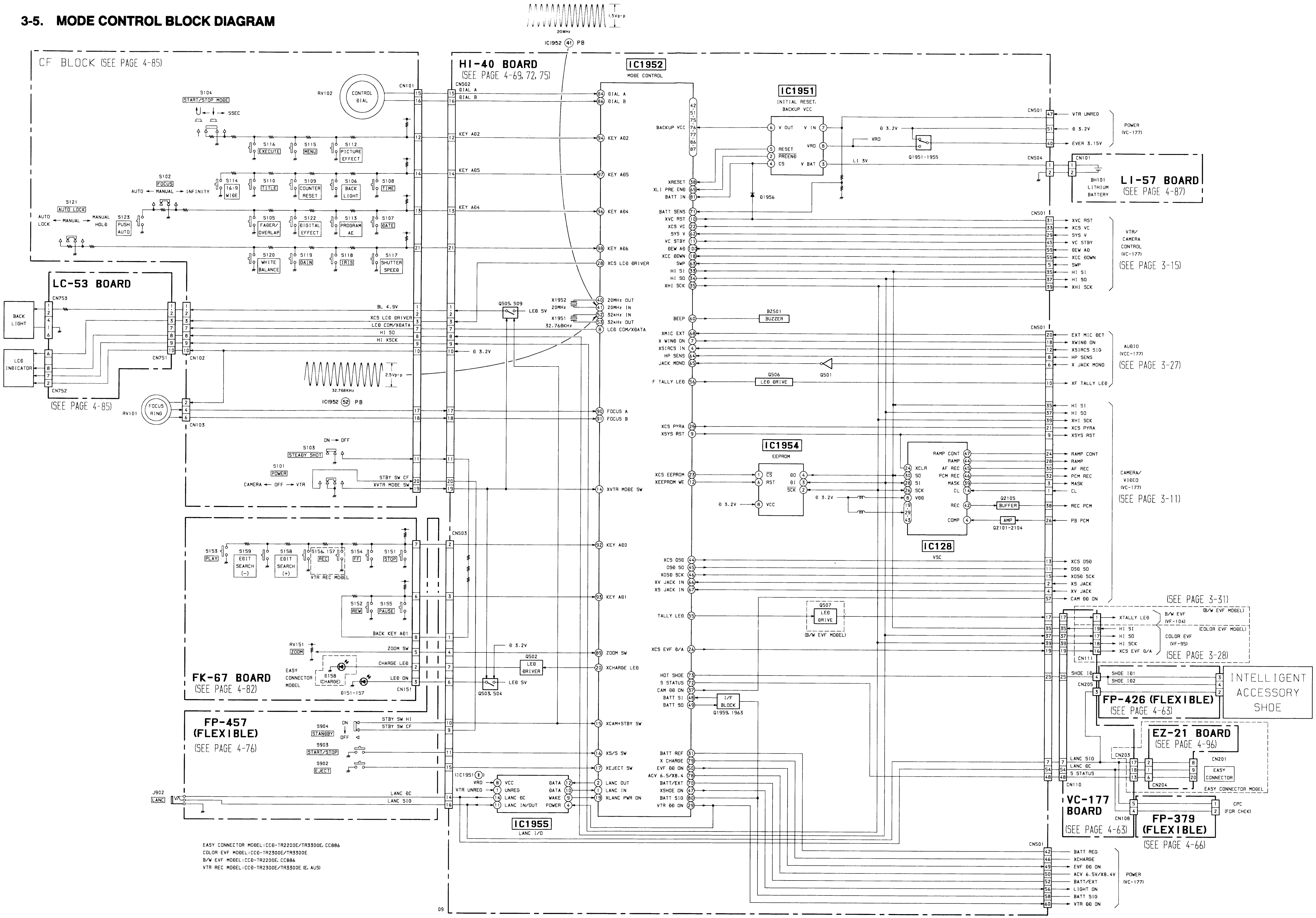

VC-177 BOARD
(SEE PAGE 4-29, 45, 50)
IC611
STEADY SHOT CONTROL
A 4.9V
Q602, 604
(IC605, 606, 610)
5V 4.9V
Y.PWM
P.PWM
ADHSTX
ADSI
ADSO
ADSCX
XCS AD
XCRST
SVMT 5.0V
VDD
VPP
AVDD
AVREF
XSCK
SI
SO
XCS
SYS V
XRST
STBY
XTAL
EXTAL
X601
12MHz
EVER 3.15V
Q603, 605
MT 5.0V
(IC607, 608)
CN603
CN202
XVC SCK2
VC SO2
VC SI2
XCS VST AD
VC STBY
CL
B-MECHA
CHASSIS
(SEE PAGE 4-51)
IC117 (1/2)
VTR/CAMERA CONTROL
IC117 (40) CAMERA REC/PB
20MHz
2.5Vp-p
AV REF
AVDD
VDD
VPP
XTAL
EXTAL
X1751
20MHz
MODE
CONTROL
(HI-40)
(SEE PAGE
3-24)
SWP
XCC DOWN
DEW AD
VC STBY
XVC RST
XCS VC
HI SO
HI SI
HI SCK
SYS V
CN110
XRST VC
SYSV
XCS VST AD
LENS RST LED
XRST PGR
VST C CHARGE
ZM RST SENS1
C RESET
26μsec
3Vp-p
IC117 (45) CAMERA REC
IRIS PWM
LENS TEMP AD
HALL AD
FC RST SENS
VC SI2
VC SO2
VC SCK2
XCS SYSTEM
XCS AU
AUDIO
(SEE PAGE 3-26)
IC118
IC119
VC SI
VC SO
XVC SCK
D1758
RP PB MODE
XFE ON
X1/2 SWP
XTBC V RESET
XRST SYSTEM
XCS IO
MECHA VD
TBC VD
MECHA HD
MECHA FLD
BOTH REC
CK CONT
XSO V RST
DA STB
CSYNC
IC117 (93) CAMERA REC
CAMERA/
VIDEO
(SEE PAGE
3-11)
XMP/ME
HALL GAIN (IC108 (39))
HALL OFFSET (IC108 (40))
MEMI VD (IC152 (51))
CL (IC202 (12))
PB RF (IC101 (13))
IC116
EEPROM
DO
DI
XSCK
VCC
XCS
RST
XCS EEPROM
XWE EEPROM
D3.2V
IC120 (1/2)
SP/LP DET
CLOG DET
SP DET
CLOG DET
Q1751
BUFFER
IC122 (1/3)
LOADING MOTOR DRIVE
VTR UNREG
D 3.2V
VCC2
VCC1
DEC2
DEC1
LIMIT ENABLE
LIMIT OUT
OUT1
OUT2
UN LOAD
LOAD
LM LIM CONT
XLM LIM ON
CN105
LM (+)
LM (-)
M903
LOADING
MOTOR
MODE SWITCH
M SW C
M SW B
M SW A
DEW AD
CN103
DEW (+)
DEW
SENSOR
IC122 (1/3) TAPE TOP/END DETECT
TOP OUT
TOP IN
END OUT
END IN
TAPE TOP
TAPE END
CN102
TAPE TOP (C)
TAPE END (C)
TAPE LED (A)
SENSOR VCC
Q001
TAPE TOP
SENSOR
Q002
TAPE END
SENSOR
D001
TAPE LED
Q1853
REG
VTR UNREG
D 3.2V
IC122 (1/3)
WAVE
SHAPER
S REEL FG AD
T REEL FG AD
SR FG
TR FG
S REEL (-)
S REEL (+)
T REEL (-)
T REEL (+)
HALL COM
H001
S REEL
SENSOR
H002
T REEL
SENSOR
LED
DRIVE
Q1854
TAPE LED ON
TAPE LED DD
XREEL HALL ON
ME SW
TAPE RECOG AD
ME/MP
HI8 MP
REC PROOF
XCC DOWN
C LOCK SW
S001
S002
CC DOWN SW
D3.2V
CN113
TEMP COM
TEMP OUT
IC251 (1/2)
IRIS DRIVE
IC253 (1/4)
IRIS DRIVE
THERMAL AD
LPF
IRIS PWM
DRIVE (+)
DRIVE (-)
CONT (+)
CONT (-)
Q251
DRIVE
HALL AD
IC253 (1/4)
HALL BIAS CONTROL
IC253 (1/4)
HALL
REF
IC251 (1/2)
HALL AMP
BIAS (+)
HALL (+)
HALL (-)
BIAS (-)
Q252
HALL GAIN
HALL OFFSET
IC253 (1/4)
HALL GAIN CONTROL
GND
SENSE
Q253
ZM RST 1
ZM RST SENS1
LENS RST LED
FC RST
FC RST SENS
IC252
ZOOM
MOTOR
DRIVE
FOCUS
MOTOR
DRIVE
B3
A3
B4
A4
A1
B1
A2
B2
EN4
IN4
EN3
IN3
EN2
IN2
EN1
IN1
VM1
VM2
VM3
VC
MT5.0V
ZM XA
ZM A
ZM XB
ZM B
FC A
FC XA
FC B
FC XB
IC255
ZOOM/FOCUS PRE DRIVE
ZM RST 1
FC RST
EN1
DIR IB
DIR IA
EN0
DIR 0B
DIR 0A
CK IN
XCLR
S OUT
S IN
SCK
CS
VD IN
VDD
XRST PGR
XCS SYSTEM
MEMI VD
V
3Vp-p

## 3-4. SERVO BLOCK DIAGRAM


VC-177 BOARD
(SEE PAGE 4-45, 50)
DD-87 BOARD
(SEE PAGE 4-111)
B-MECHA (1/2)
(SEE PAGE 4-51)
FP-379 (FLEXIBLE)
(SEE PAGE 4-66)
IC121 (1/2)
DRUM FG/PG WAVE SHAPER
IC117 (1/2)
SERVO
IC122 (1/4)
LPF
IC001 (2/2)
IC118
IC119
IC120 (1/2)
ATF SERVO
IC1501 (1/2)
DRUM/CAPSTAN PWM DRIVE
DRUM
FG
PG
D FG
FG/PG COM
D PG
CN104
CN103
CN108
CN106
CN1503
CN1503
VCC1
D 3.2V
CAPSTAN FG
CFG Vcc
CFG (+)
CFG GND
CFG (-)
CAPSTAN FG WAVE SHAPER
OFFSET ADJ
CAP FG
CFG DUTY
CFG DUTY IC108 ⑬
CAMERA/VIDEO BLOCK
(SEE PAGE 3-11)
CPC (FOR CHECK)
LPF
WAVE SHAPER
V REF
WAVE SHAPER
DRUM FG
DRUM PG
CAPSTAN SERVO
CAP FG
X1752 11.79MHz
OSC0
OSC1
ATF ERR AD
VTR/CAMERA CONTROL
CFG HMS
VDD
A VREF
A VDD
VDD
VDD VPP
EVER 3.15V
XCS ATF
VC SO
VC SCK
ATF STBY
VC SO
VC SCK
DRUM PWM
CAP PWM
REF PILOT
DRUM ON
CAP ON
CAP FWD
RP PB MODE
RP PB
ATF 5.9M
LPF
LPF
ATT
PROTECT
0.22V
DRUM ERROR
CAP ERROR
Q1851, 1852
BUFFER
CAP ON
SHORT CIRCUIT PROTECT
PWM
SWITCHING DRIVE
VTR D/D ON (CN1503 ⑮)
OSC
OUTPUT VCC 56
MT UNREG
Q1502 SWITCHING
Q1501 SWITCHING
L1505
L1504
REC/PB
REF PILOT
CLK 5.9M
REC ATF
LPF
Q1751 BUFF
SPIN
PB RF
LPF, AMP
MODULATOR
16KHz BPF
46KHz BPF
LPF
LPF
DET
V REF
ERR
XCS ATF
VC SO
VC SCK
ATF STBY
CS
SIN
SCLK
STBY
DVDD
AVDD
D 3.2V
IC117 ㊿ CAMERA REC/PB 40msec 3Vp-p
IC121 ⑱ CAMERA REC/PB 3.4msec 3.1Vp-p
IC117 (57) CAMERA REC/PB 3.4msec 3Vp-p
IC117 ㊹ CAMERA REC/PB 26μsec 3Vp-p
IC117 ㊸ CAMERA REC/PB 26μsec 3Vp-p
IC117 (58) CAMERA REC/PB 0.9msec 3Vp-p
IC121 ⑪ CAMERA REC/PB 2V 3Vp-p
IC117 (67) CAMERA REC/PB 11.79MHz 1.6Vp-p
IC117 (69) CAMERA REC/PB 5.86MHz 3.3Vp-p
IC1501 (64) PB 48kHz 0.8Vp-p
IC1501 ④ PB 48kHz 0.8Vp-p
IC120 ② PB 2V 0.3Vp-p
IC120 ⑬ CAMERA REC H:5μsec V:0.2Vdiv 0.4Vp-p
IC120 ㉛ PB 2V 0.4Vp-p
IC120 ③ PB 2V 3.8Vp-p
09

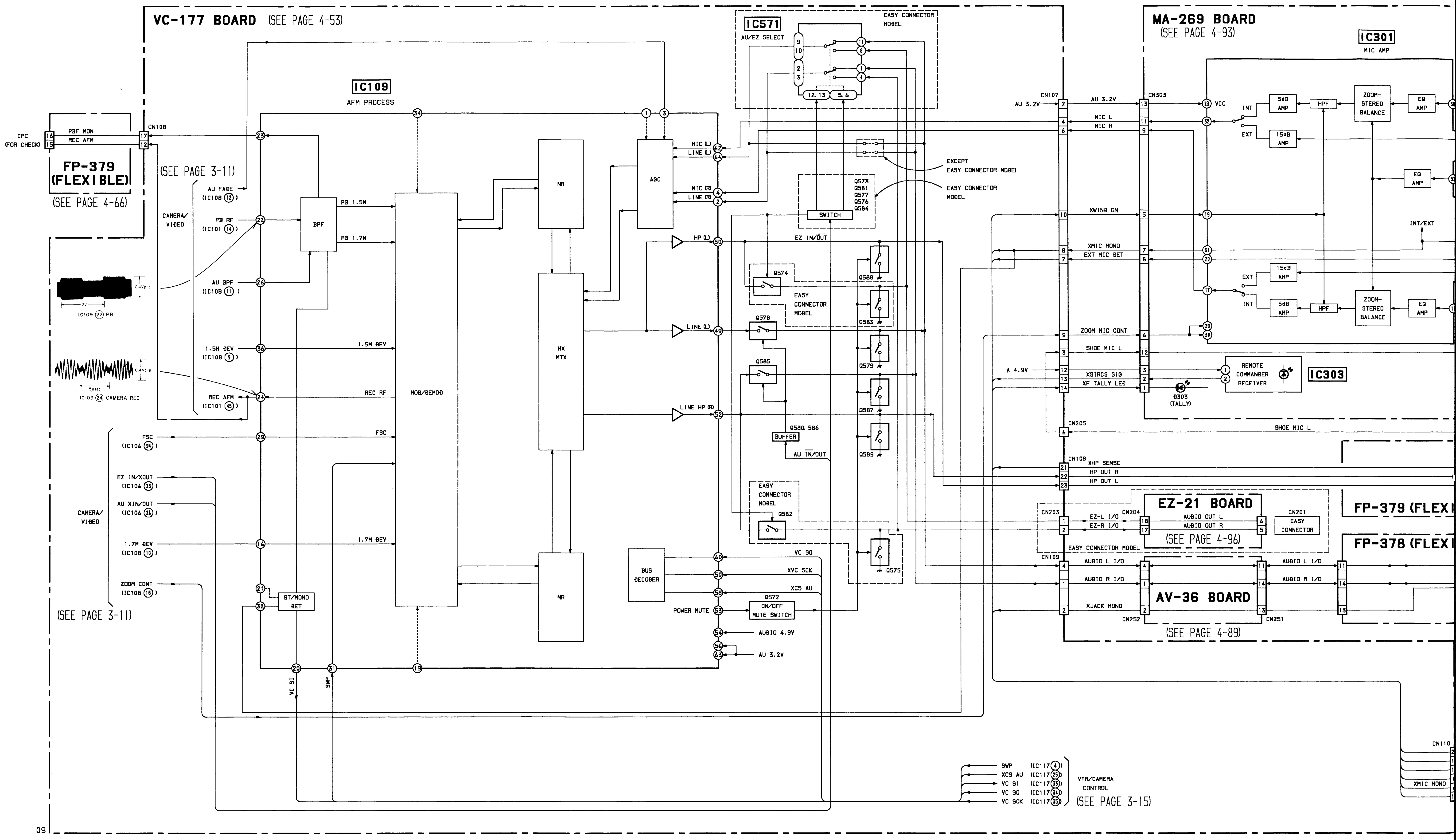

B-MECHA (1/2)
(SEE PAGE 4-51)
0.8Vp-p
PB
MT UNREG
L1505
CN1503
CN106
DRUM VS
Q1502
SWITCHING
MT UNREG
MT UNREG
L1504
Q1501
SWITCHING
VTR UNREG
D 3.2V
1Vp-p
6.7msec
IC121 ①, ②, ㉙
CN104
COM
Vcc 2
Vcc 1
COM
VS
DRUM ON
STBY
U IN
V IN
W IN
CONTROL
LOGIC
OUTPUT
DRIVE
BUFFER
OUTPUT
DRIVE
U
V
W
U
V
W
M901
DRUM MOTOR
IC121 (1/2)
DRUM MOTOR DRIVE
I COM
R1851-1854
DRUM DRIVE
CURRENT SENS
CN103
CAP VS
VTR UNREG
VCC 2
0.8Vp-p
481kHz
IC1501 ④ PB
IC001 (1/2)
CAPSTAN MOTOR DRIVE
VTR UNREG
Vcc
VS
H1 (+)
H1 (-)
U IN 1
U IN 2
H2 (+)
H2 (-)
V IN 1
V IN 2
H3 (+)
H3 (-)
W IN 1
W IN 2
120°
LOGIC
U
V
W
M902
CAPSTAN MOTOR
CAP U
CAP V
CAP W
CAP ON
STANDBY
CAP ON
STBY
POWER
OFF
HE
POWER
VH+
VH-
C HALL Vcc
CAP FWD
FRC
FRC
ERR
DVDD
AVDD
D 3.2V
H1 (+)
H1 (-)
H2 (+)
H2 (-)
H3 (+)
H3 (-)
C HALL GND

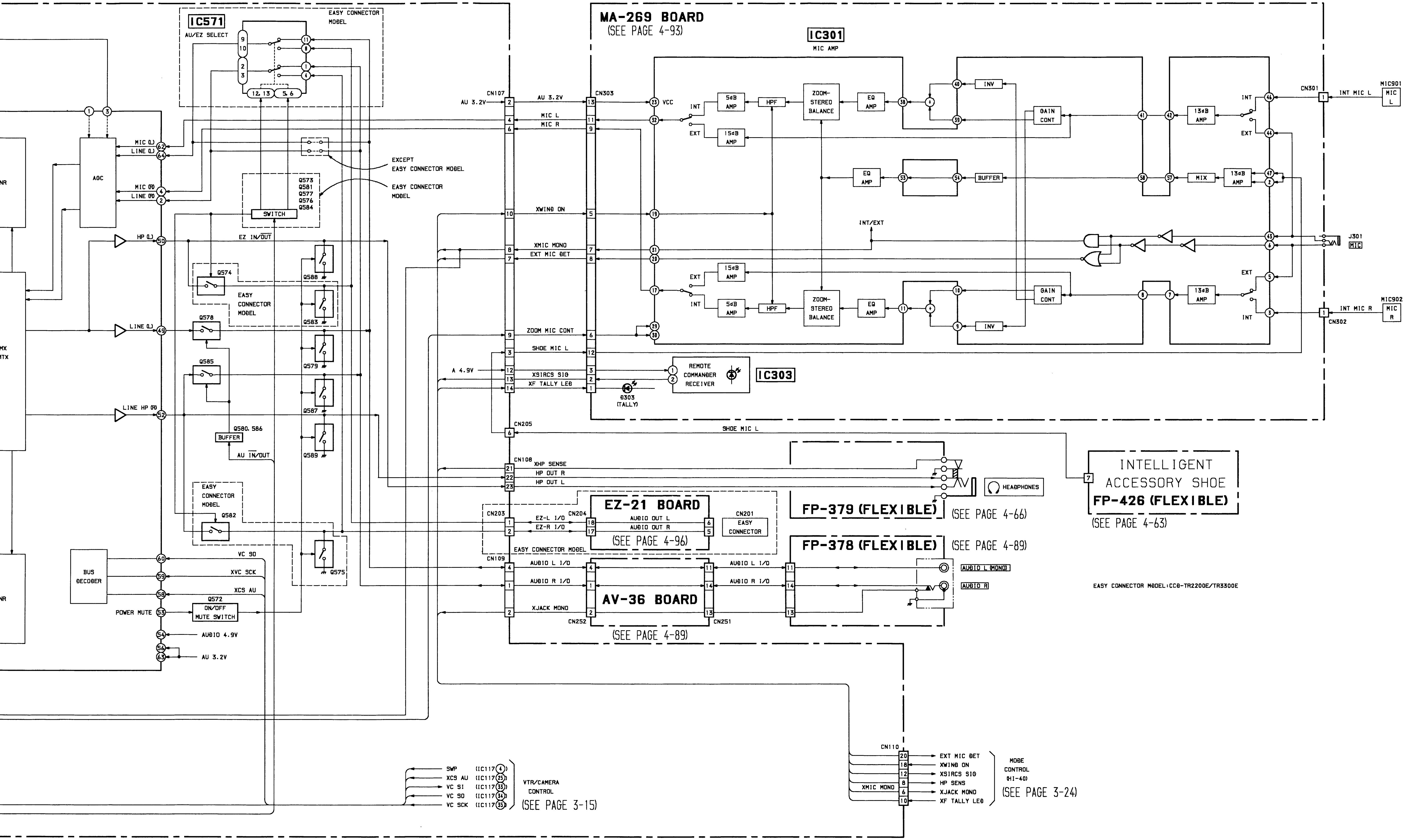
## 3-5. MODE CONTROL BLOCK DIAGRAM


1.5Vp-p
20MHz
IC1952 (41) PB
CF BLOCK (SEE PAGE 4-85)
S104 START/STOP MODE
5SEC
RV102
CONTROL DIAL
CN101
S116 EXECUTE
S115 MENU
S112 PICTURE EFFECT
S102 FOCUS
AUTO ← MANUAL → INFINITY
S114 16:9 WIDE
S110 TITLE
S109 COUNTER RESET
S106 BACK LIGHT
S108 TIME
S121 AUTO LOCK
AUTO LOCK ← MANUAL → MANUAL HOLD
S123 PUSH AUTO
S105 FADER/OVERLAP
S122 DIGITAL EFFECT
S113 PROGRAM AE
S107 DATE
S120 WHITE BALANCE
S119 GAIN
S118 IRIS
S117 SHUTTER SPEED
LC-53 BOARD
CN753
BACK LIGHT
LCD INDICATOR
CN752
CN751
CN102
(SEE PAGE 4-85)
RV101
FOCUS RING
CN103
BL 4.9V
XCS LCD DRIVER
LCD COM/XDATA
HI SO
HI XSCK
D 3.2V
2.5Vp-p
32.768KHz
IC1952 (52) PB
ON → OFF
S103 STEADY SHOT
S101 POWER
CAMERA ← OFF → VTR
STBY SW CF
XVTR MODE SW
HI-40 BOARD
(SEE PAGE 4-69, 72, 75)
CN502
DIAL A
DIAL B
KEY AD2
KEY AD5
KEY AD4
Q505, 509
LED 5V
X1952 20MHz
X1951 32.768KHz
IC1952
MODE CONTROL
BACKUP VCC
XRESET
XLI PRE END
BATT IN
BATT SENS
XVC RST
XCS VC
SYS V
VC STBY
DEW AD
XCC DOWN
SWP
HI SI
HI SO
XHI SCK
KEY AD6
XCS LCD DRIVER
20MHz OUT
20MHz IN
32kHz IN
32kHz OUT
LCD COM/XDATA
BEEP
BZ501 BUZZER
XMIC EXT
X WIND ON
XSIRCS IN
HP SENS
JACK MONO
F TALLY LED
Q506 LED DRIVE
Q501
FOCUS A
FOCUS B
XCS PYRA
XSYS RST
IC1954 EEPROM
XCS EEPROM
XEEPROM WE
CS
DO
DI
SCK
RST
VCC
D 3.2V
XVTR MODE SW
IC1951
INITIAL RESET, BACKUP VCC
V OUT
V IN
RESET
PREEND
CS
VRO
V BAT
LI 3V
D1956
Q1951-1955
CN501
VTR UNREG
D 3.2V
EVER 3.15V
POWER (VC-177)
CN504
CN101
BH101 LITHIUM BATTERY
LI-57 BOARD
(SEE PAGE 4-87)
XVC RST
XCS VC
SYS V
VC STBY
DEW AD
XCC DOWN
SWP
HI SI
HI SO
XHI SCK
VTR/CAMERA CONTROL (VC-177)
(SEE PAGE 3-15)
EXT MIC DET
XWIND ON
XSIRCS SIG
HP SENS
X JACK MONO
XF TALLY LED
AUDIO (VCC-177)
(SEE PAGE 3-27)
HI SI
HI SO
XHI SCK
XCS PYRA
XSYS RST
RAMP CONT
RAMP
AF REC
PCM REC
MASK
CL
REC
COMP
XCLR
SO
SI
SCK
VDD
Q2105 BUFFER
AMP Q2101-2104
IC128 VSC
RAMP CONT
RAMP
AF REC
PCM REC
MASK
CL
REC PCM
PB PCM
CAMERA/VIDEO (VC-177)
(SEE PAGE 3-11)
XCS DSD
DSD SO
XDSD SCK
XV JACK IN
XS JACK IN
XCS DSD
DSD SO
XDSD SCK
XS JACK
XV JACK
CAM DD ON
(SEE PAGE 3-31)
CN503
S153 PLAY
S159 EDIT SEARCH (-)
S158 EDIT SEARCH (+)
S156, 157 REC
S154 FF
S151 STOP
VTR REC MODEL
KEY AD0
S152 REW
S155 PAUSE
BACK KEY AD1
KEY AD1
RV151 ZOOM
ZOOM SW
CHARGE LED
LED ON
EASY CONNECTOR MODEL
D158 CHARGE
D151-157
CN151
FK-67 BOARD
(SEE PAGE 4-82)
D 3.2V
Q502 LED DRIVER
LED 5V
Q503, 504
ZOOM SW
XCHARGE LED
TALLY LED
Q507 LED DRIVE
(B/W EVF MODEL)
XCS EVF B/A
XTALLY LED
B/W EVF (VF-104)
(B/W EVF MODEL)
HI SI
HI SO
HI SCK
XCS EVF B/A
(COLOR EVF MODEL)
COLOR EVF (VF-95)
(SEE PAGE 3-28)
CN111
HOT SHOE
S STATUS
CAM DD ON
BATT SI
BATT SO
I/F BLOCK
Q1959, 1963
SHOE 101
SHOE 102
CN205
FP-426 (FLEXIBLE)
(SEE PAGE 4-63)
INTELLIGENT ACCESSORY SHOE
FP-457 (FLEXIBLE)
(SEE PAGE 4-76)
S904 STANDBY
ON
OFF
STBY SW HI
STBY SW CF
S903 START/STOP
S902 EJECT
XCAM+STBY SW
XS/S SW
XEJECT SW
J902 LANC
LANC DC
LANC SIG
(IC1951 (8))
VRO
VTR UNREG
VCC
UNREG
LANC DC
LANC IN/OUT
DATA
WAKE
POWER
IC1955 LANC I/O
LANC OUT
LANC IN
XLANC PWR ON
BATT REF
X CHARGE
EVF DD ON
ACV 6.5/X8.4
BATT/EXT
XSHOE ON
BATT SIG
VTR DD ON
EZ-21 BOARD
(SEE PAGE 4-96)
CN203
CN201
EASY CONNECTOR
CN204
EASY CONNECTOR MODEL
LANC SIG
LANC DC
S STATUS
CN110
VC-177 BOARD
(SEE PAGE 4-63)
CN108
CPC (FOR CHCK)
FP-379 (FLEXIBLE)
(SEE PAGE 4-66)
BATT REG
XCHARGE
EVF DD ON
ACV 6.5V/X8.4V
BATT/EXT
LIGHT ON
BATT SIG
VTR DD ON
POWER (VC-177)
09

EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E, CC886
COLOR EVF MODEL:CCD-TR2300E/TR3300E
B/W EVF MODEL:CCD-TR2200E, CC886
VTR REC MODEL:CCD-TR2300E/TR3300E (E, AUS)

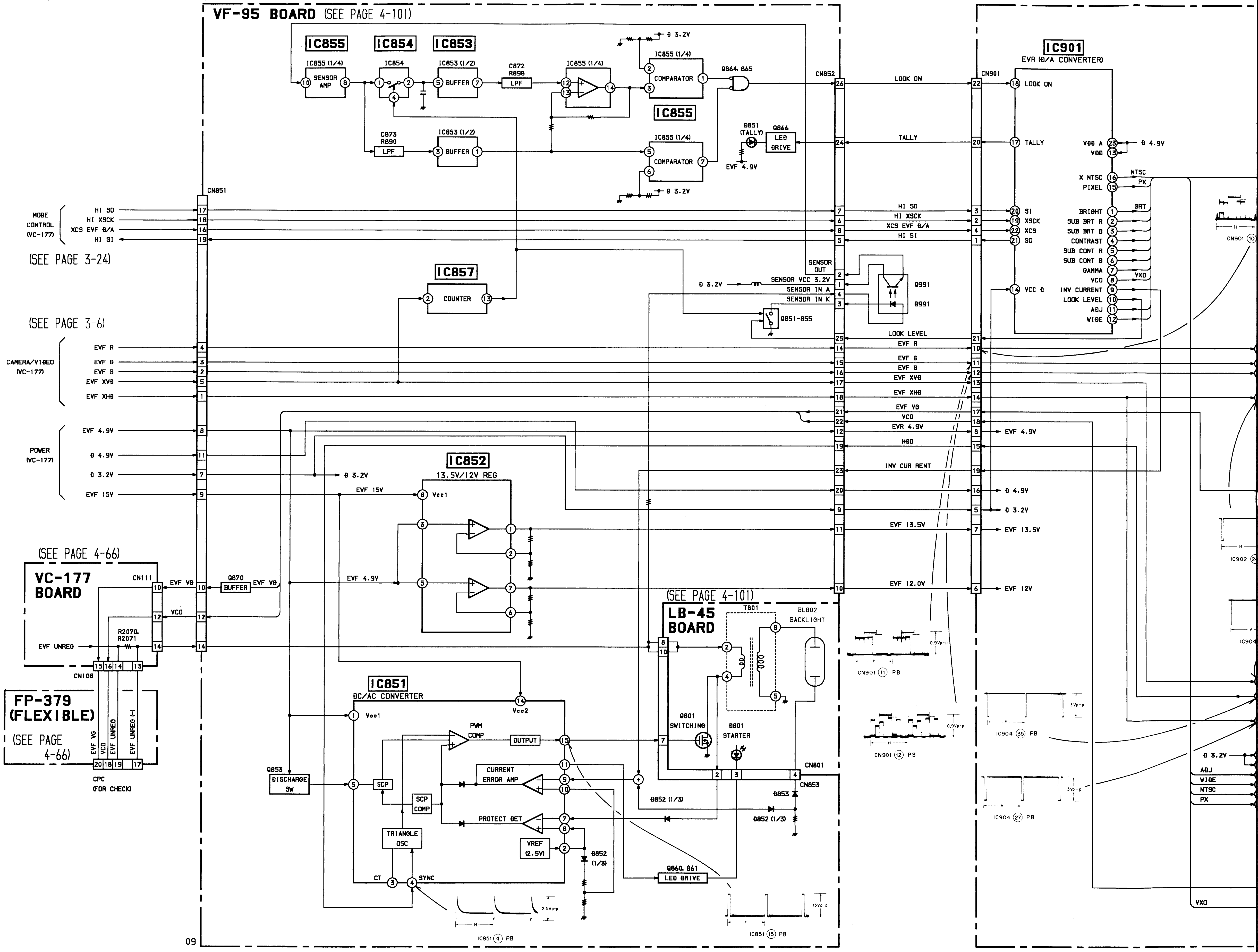
## 3-6. AUDIO BLOCK DIAGRAM


VC-177 BOARD (SEE PAGE 4-53)
IC109
AFM PROCESS
IC571
AU/EZ SELECT
EASY CONNECTOR MODEL
MA-269 BOARD (SEE PAGE 4-93)
IC301
MIC AMP
CPC (FOR CHECK)
PBF MON
REC AFM
FP-379 (FLEXIBLE)
(SEE PAGE 4-66)
CN108
(SEE PAGE 3-11)
AU FADE (IC108 ⑫)
CAMERA/ VIDEO
PB RF (IC101 ⑭)
AU DEV (IC108 ⑪)
1.5M DEV (IC108 ⑨)
REC AFM (IC101 ㊺)
BPF
PB 1.5M
PB 1.7M
1.5M DEV
REC RF
FSC
1.7M DEV
MOD/DEMOD
NR
MX MTX
AGC
MIC (L)
LINE (L)
MIC (R)
LINE (R)
HP (L)
LINE (L)
LINE HP (R)
VC SO
XVC SCK
XCS AU
POWER MUTE
AUDIO 4.9V
AU 3.2V
BUS DECODER
Q572 ON/OFF MUTE SWITCH
ST/MONO DET
VC SI
SWP
0.4Vp-p
2V
IC109 ㉒ PB
5μsec
IC109 ㉔ CAMERA REC
FSC (IC106 ㊹)
EZ IN/XOUT (IC106 ㉟)
AU XIN/OUT (IC106 ㊱)
CAMERA/ VIDEO
1.7M DEV (IC108 ⑩)
ZOOM CONT (IC108 ⑱)
(SEE PAGE 3-11)
SWITCH
Q573 Q581 Q577 Q576 Q584
EXCEPT EASY CONNECTOR MODEL
EASY CONNECTOR MODEL
EZ IN/OUT
Q574
EASY CONNECTOR MODEL
Q578
Q585
Q580, 586
BUFFER
AU IN/OUT
Q588
Q583
Q579
Q587
Q589
EASY CONNECTOR MODEL
Q582
Q575
CN107
AU 3.2V
MIC L
MIC R
XWIND ON
XMIC MONO
EXT MIC DET
ZOOM MIC CONT
SHOE MIC L
A 4.9V
XSIRCS SIG
XF TALLY LED
CN303
VCC
INT
EXT
5dB AMP
15dB AMP
HPF
ZOOM-STEREO BALANCE
EQ AMP
INT/EXT
REMOTE COMMANDER RECEIVER
IC303
D303 (TALLY)
CN205
SHOE MIC L
CN108
XHP SENSE
HP OUT R
HP OUT L
EZ-21 BOARD
CN203
CN204
EZ-L I/O
EZ-R I/O
AUDIO OUT L
AUDIO OUT R
(SEE PAGE 4-96)
CN201 EASY CONNECTOR
EASY CONNECTOR MODEL
CN109
AUDIO L I/O
AUDIO R I/O
XJACK MONO
AV-36 BOARD
CN252
CN251
(SEE PAGE 4-89)
FP-379 (FLEXI
FP-378 (FLEXI
CN110
XMIC MONO
SWP (IC117 ④)
XCS AU (IC117 ㉕)
VC SI (IC117 ㉝)
VC SO (IC117 ㉞)
VC SCK (IC117 ㉟)
VTR/CAMERA CONTROL
(SEE PAGE 3-15)
09


IC571
AU/EZ SELECT
EASY CONNECTOR MODEL
AGC
MIC (L)
LINE (L)
MIC (R)
LINE (R)
HP (L)
LINE (L)
LINE HP (R)
EXCEPT EASY CONNECTOR MODEL
EASY CONNECTOR MODEL
Q573 Q581 Q577 Q576 Q584
SWITCH
EZ IN/OUT
Q574
EASY CONNECTOR MODEL
Q578
Q585
Q588
Q583
Q579
Q587
Q589
Q580, 586
BUFFER
AU IN/OUT
Q582
Q575
BUS DECODER
VC SO
XVC SCK
XCS AU
POWER MUTE
Q572 ON/OFF MUTE SWITCH
AUDIO 4.9V
AU 3.2V
CN107
AU 3.2V
MIC L
MIC R
XWIND ON
XMIC MONO
EXT MIC DET
ZOOM MIC CONT
SHOE MIC L
A 4.9V
XSIRCS SIG
XF TALLY LED
MA-269 BOARD
(SEE PAGE 4-93)
IC301
MIC AMP
CN303
VCC
INT
EXT
5dB AMP
15dB AMP
HPF
ZOOM-STEREO BALANCE
EQ AMP
INV
GAIN CONT
13dB AMP
MIX
BUFFER
INT/EXT
CN301
INT MIC L
MIC901
MIC L
J301
MIC
CN302
INT MIC R
MIC902
MIC R
REMOTE COMMANDER RECEIVER
IC303
D303 (TALLY)
CN205
SHOE MIC L
INTELLIGENT ACCESSORY SHOE
FP-426 (FLEXIBLE)
(SEE PAGE 4-63)
CN108
XHP SENSE
HP OUT R
HP OUT L
FP-379 (FLEXIBLE)
(SEE PAGE 4-66)
HEADPHONES
CN203
EZ-L I/O
EZ-R I/O
CN204
EZ-21 BOARD
AUDIO OUT L
AUDIO OUT R
(SEE PAGE 4-96)
CN201
EASY CONNECTOR
EASY CONNECTOR MODEL
CN109
AUDIO L I/O
AUDIO R I/O
XJACK MONO
AV-36 BOARD
CN252
CN251
(SEE PAGE 4-89)
FP-378 (FLEXIBLE)
(SEE PAGE 4-89)
AUDIO L (MONO)
AUDIO R
EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E
SWP (IC117④)
XCS AU (IC117㉕)
VC SI (IC117㉝)
VC SO (IC117㉞)
VC SCK (IC117㉟)
VTR/CAMERA CONTROL
(SEE PAGE 3-15)
CN110
EXT MIC DET
XWIND ON
XSIRCS SIG
HP SENS
XJACK MONO
XF TALLY LED
XMIC MONO
MODE CONTROL (H1-40)
(SEE PAGE 3-24)

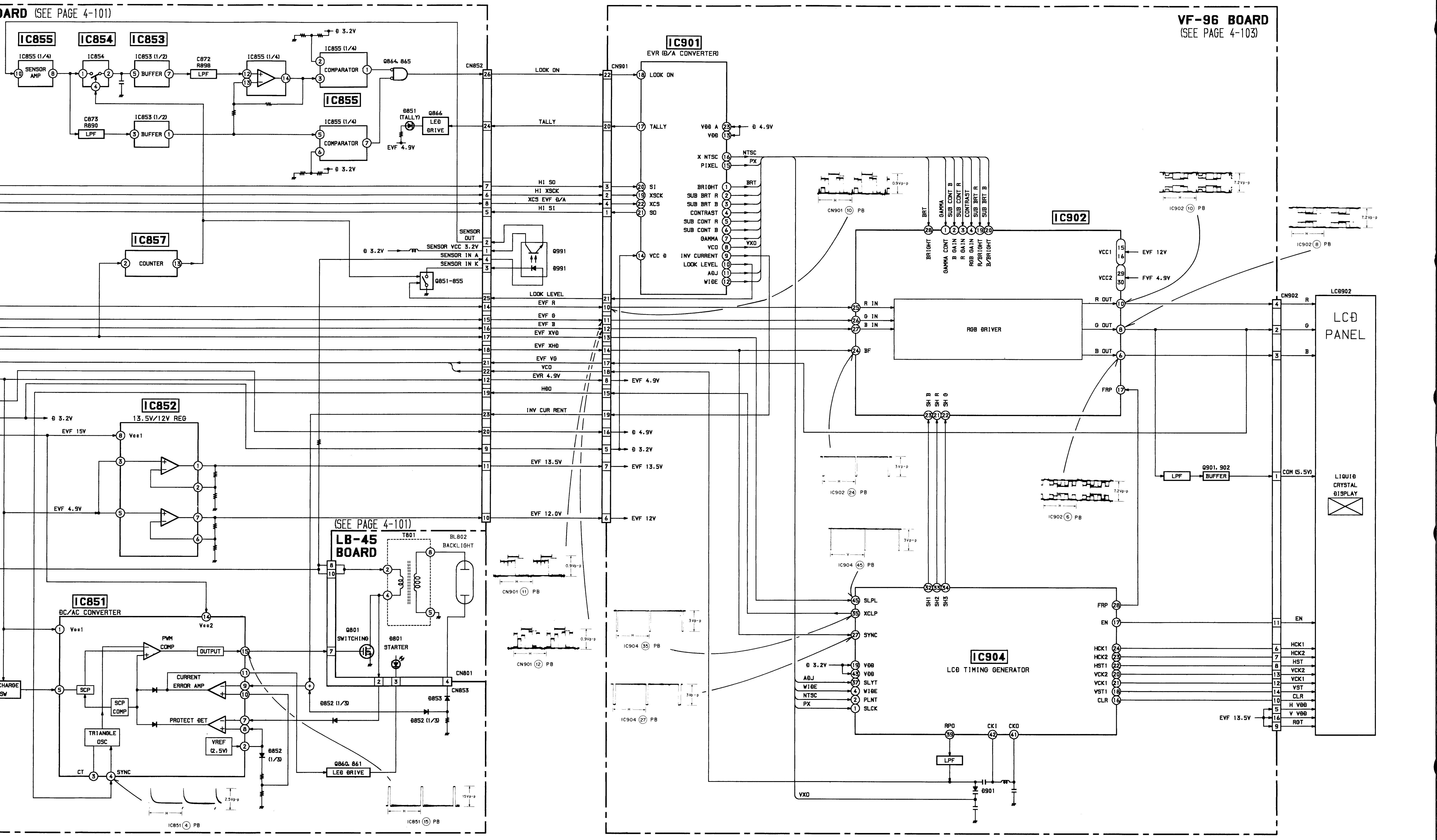
## 3-7. COLOR EVF BLOCK DIAGRAM (COLOR EVF MODEL)

(CCD-TR2300E/TR3300E)



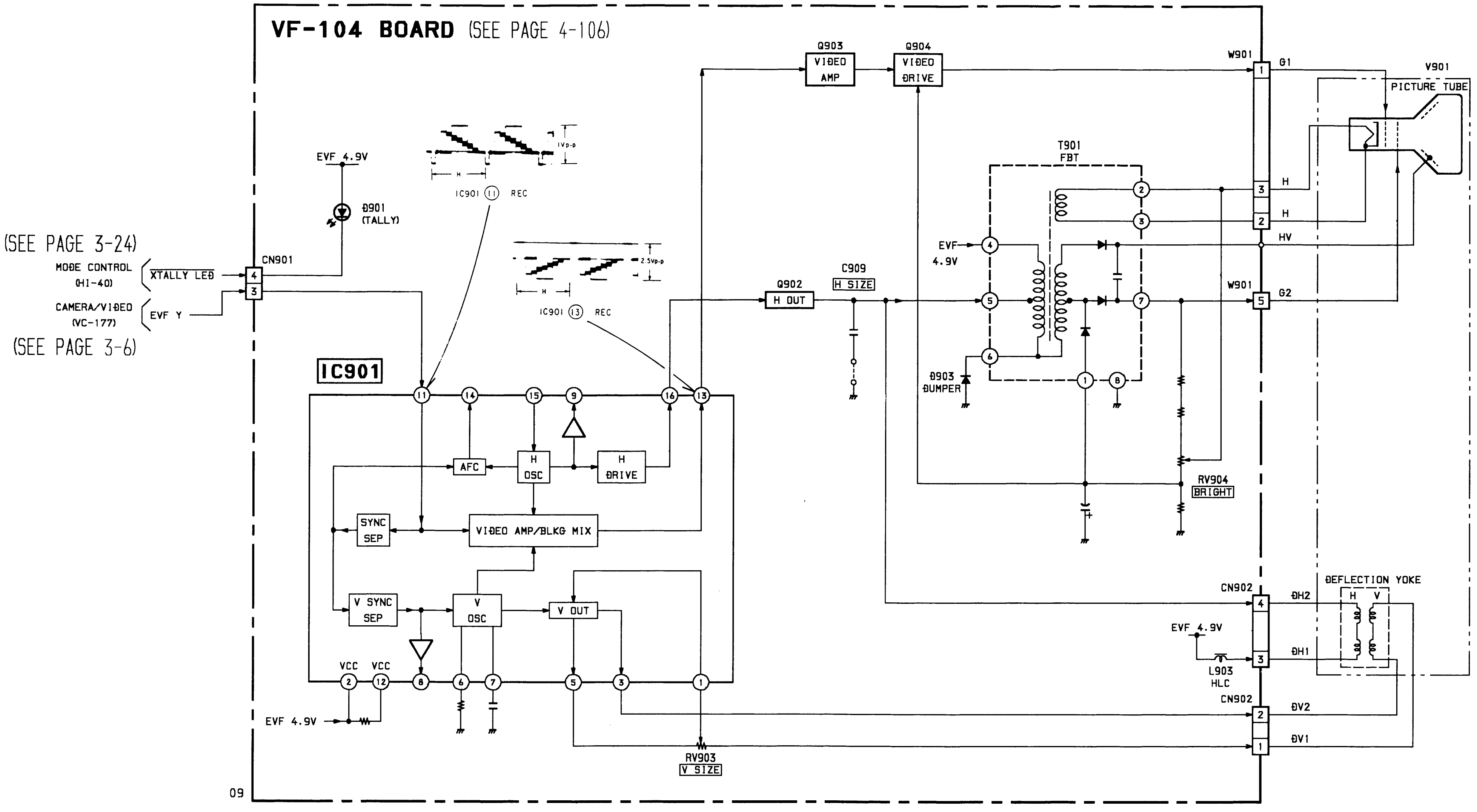
VF-95 BOARD (SEE PAGE 4-101)
IC855
IC854
IC853
IC855 (1/4)
SENSOR AMP
IC854
IC853 (1/2)
BUFFER
C872
R898
LPF
IC855 (1/4)
IC855 (1/4)
COMPARATOR
Q864, 865
CN852
C873
R890
LPF
IC853 (1/2)
BUFFER
IC855
IC855 (1/4)
COMPARATOR
D851 (TALLY)
Q866
LED DRIVE
EVF 4.9V
D 3.2V
CN851
MODE CONTROL (VC-177)
HI SO
HI XSCK
XCS EVF D/A
HI SI
(SEE PAGE 3-24)
IC857
COUNTER
SENSOR OUT
D 3.2V
SENSOR VCC 3.2V
SENSOR IN A
SENSOR IN K
Q851-855
Q991
D991
(SEE PAGE 3-6)
CAMERA/VIDEO (VC-177)
EVF R
EVF G
EVF B
EVF XVD
EVF XHD
POWER (VC-177)
EVF 4.9V
D 4.9V
D 3.2V
EVF 15V
LOOK ON
TALLY
HI SO
HI XSCK
XCS EVF D/A
HI SI
LOOK LEVEL
EVF R
EVF G
EVF B
EVF XVD
EVF XHD
EVF VG
VCO
EVR 4.9V
HDD
INV CUR RENT
EVF 13.5V
EVF 12.0V
IC852
13.5V/12V REG
Vcc1
(SEE PAGE 4-66)
VC-177 BOARD
CN111
EVF VG
VCO
EVF UNREG
R2070, R2071
Q870
BUFFER
CN108
FP-379 (FLEXIBLE)
(SEE PAGE 4-66)
EVF VG
VCO
EVF UNREG
EVF UNREG (-)
CPC (FOR CHECK)
IC851
DC/AC CONVERTER
Vcc1
Vcc2
PWM COMP
OUTPUT
Q853
DISCHARGE SW
SCP
SCP COMP
CURRENT ERROR AMP
PROTECT DET
TRIANGLE OSC
VREF (2.5V)
CT
SYNC
D852 (1/3)
D853
D852 (1/3)
D852 (1/3)
Q860, 861
LED DRIVE
2.5Vp-p
IC851 ④ PB
15Vp-p
IC851 ⑮ PB
(SEE PAGE 4-101)
LB-45 BOARD
T801
BL802 BACKLIGHT
Q801 SWITCHING
D801 STARTER
CN801
CN853
0.9Vp-p
CN901 ⑪ PB
0.9Vp-p
CN901 ⑫ PB
3Vp-p
IC904 ㉟ PB
3Vp-p
IC904 ㉗ PB
CN901
IC901
EVR (D/A CONVERTER)
LOOK ON
TALLY
SI
XSCK
XCS
SO
VCC D
VDD A
VDD
X NTSC
PIXEL
BRIGHT
SUB BRT R
SUB BRT B
CONTRAST
SUB CONT R
SUB CONT B
GAMMA
VCO
INV CURRENT
LOOK LEVEL
ADJ
WIDE
D 4.9V
NTSC
PX
BRT
VXO
EVF 4.9V
D 4.9V
D 3.2V
EVF 13.5V
EVF 12V
CN901 ⑩
IC902
IC904
D 3.2V
ADJ
WIDE
NTSC
PX
VXO
09

## OR EVF MODEL)



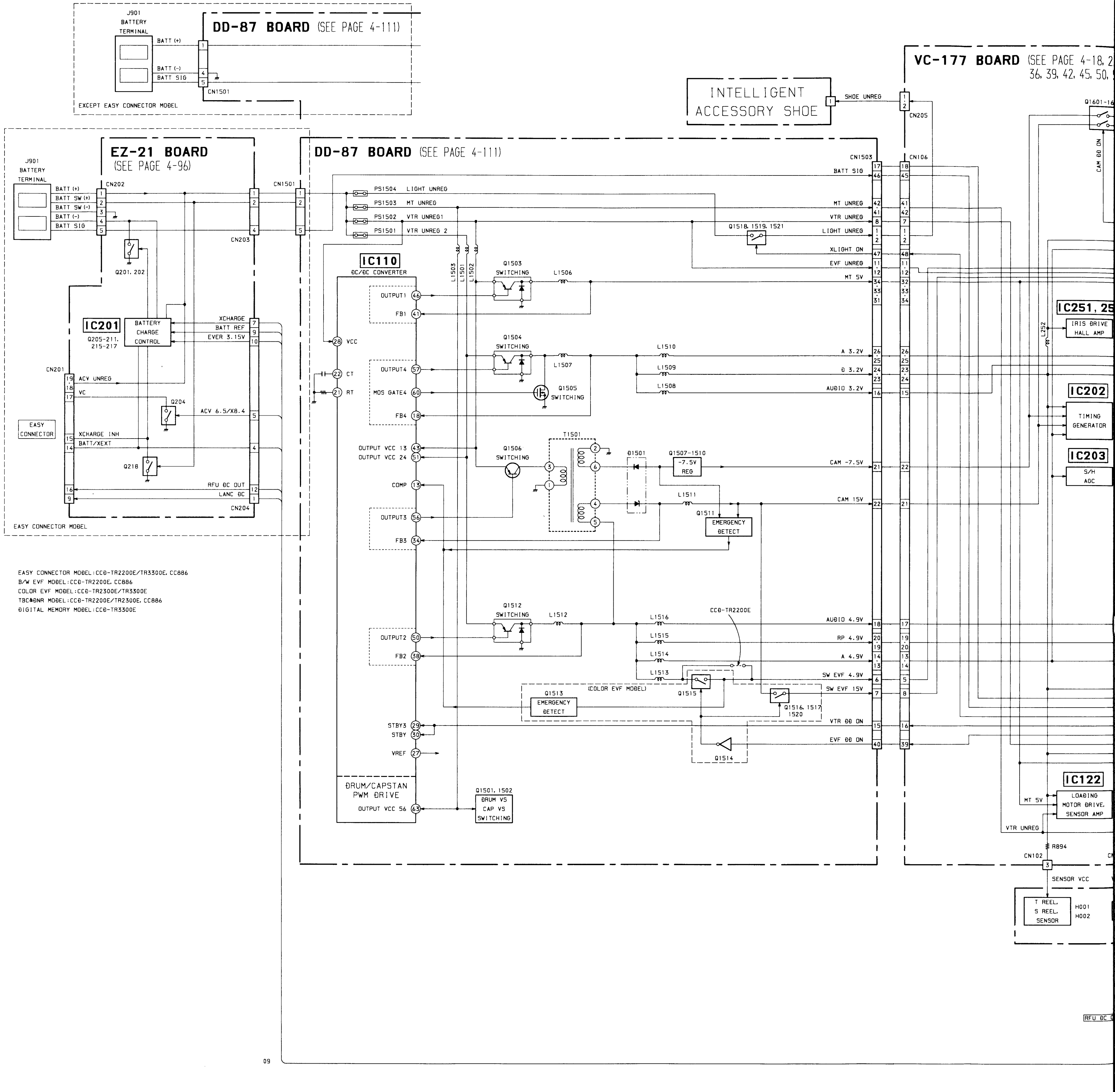
ARD (SEE PAGE 4-101)
IC855
IC854
IC853
SENSOR AMP
BUFFER
LPF
COMPARATOR
Q864, 865
CN852
LOOK ON
Q851 (TALLY)
Q866 LED DRIVE
EVF 4.9V
TALLY
D 3.2V
HI SO
HI XSCK
XCS EVF D/A
HI SI
IC857
COUNTER
SENSOR OUT
SENSOR VCC 3.2V
SENSOR IN A
SENSOR IN K
Q991
D991
Q851-855
LOOK LEVEL
EVF R
EVF G
EVF B
EVF XVD
EVF XHD
EVF VG
VCO
EVR 4.9V
HDD
INV CUR RENT
EVF 13.5V
EVF 12.0V
IC852
13.5V/12V REG
EVF 15V
Vcc1
IC851
DC/AC CONVERTER
Vcc2
PWM COMP
OUTPUT
CURRENT ERROR AMP
SCP
SCP COMP
PROTECT DET
TRIANGLE OSC
VREF (2.5V)
CT
SYNC
CHARGE SW
D852 (1/3)
Q860, 861 LED DRIVE
(SEE PAGE 4-101)
LB-45 BOARD
T801
BL802 BACKLIGHT
Q801 SWITCHING
D801 STARTER
CN801
CN853
IC851 ④ PB
IC851 ⑮ PB
2.5Vp-p
15Vp-p
CN901 ⑪ PB
CN901 ⑫ PB
0.9Vp-p
VF-96 BOARD
(SEE PAGE 4-103)
IC901
EVR (D/A CONVERTER)
CN901
LOOK ON
TALLY
VDD A
VDD
X NTSC
PIXEL
BRIGHT
SUB BRT R
SUB BRT B
CONTRAST
SUB CONT R
SUB CONT B
GAMMA
VCO
INV CURRENT
LOOK LEVEL
ADJ
WIDE
SI
XSCK
XCS
SO
VCC D
D 4.9V
EVF 4.9V
D 3.2V
EVF 13.5V
EVF 12V
NTSC
PX
BRT
VXO
CN901 ⑩ PB
IC902
BRIGHT
GAMMA
SUB CONT B
SUB CONT R
CONTRAST
SUB BRT R
SUB BRT B
GAMMA CONT
B GAIN
R GAIN
RGB GAIN
R/BRIGHT
B/BRIGHT
VCC1
VCC2
EVF 12V
EVF 4.9V
R IN
G IN
B IN
BF
RGB DRIVER
R OUT
G OUT
B OUT
FRP
SH B
SH R
SH G
IC902 ⑩ PB
IC902 ⑧ PB
IC902 ⑥ PB
IC902 ㉔ PB
7.2Vp-p
3Vp-p
IC904 ㊺ PB
IC904 ㉟ PB
IC904 ㉗ PB
IC904
LCD TIMING GENERATOR
SLPL
XCLP
SYNC
VDD
SLYT
WIDE
PLNT
SLCK
SH1
SH2
SH3
FRP
EN
HCK1
HCK2
HST1
VCK2
VCK1
VST1
CLR
RPO
CKI
CKO
LPF
D901
Q901, 902 BUFFER
CN902
R
G
B
COM (5.5V)
HCK1
HCK2
HST
VCK2
VCK1
VST
CLR
H VDD
V VDD
RGT
EVF 13.5V
LCD902
LCD PANEL
LIQUID CRYSTAL DISPLAY

## 3-8. B/W EVF BLOCK DIAGRAM (B/W EVF MODEL)
(CCD-TR2200E, CC 886)

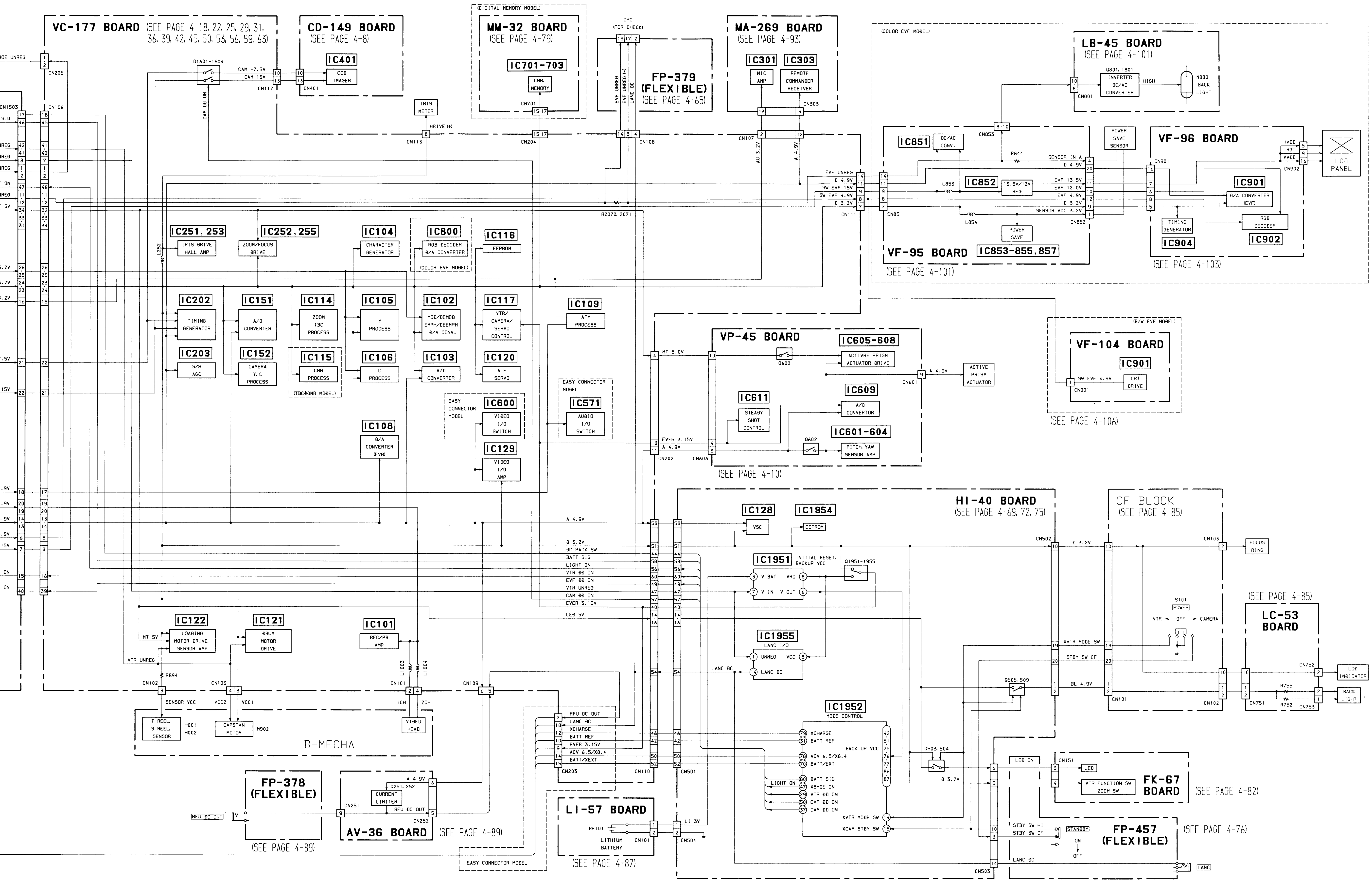


VF-104 BOARD (SEE PAGE 4-106)
(SEE PAGE 3-24)
MODE CONTROL
(HI-40)
XTALLY LED
CAMERA/VIDEO
(VC-177)
EVF Y
(SEE PAGE 3-6)
CN901
4
3
EVF 4.9V
D901
(TALLY)
1Vp-p
H
IC901 11 REC
2.5Vp-p
H
IC901 13 REC
IC901
11
14
15
9
16
13
AFC
H
OSC
H
DRIVE
SYNC
SEP
VIDEO AMP/BLKG MIX
V SYNC
SEP
V
OSC
V OUT
VCC
VCC
2
12
8
6
7
5
3
1
EVF 4.9V
RV903
V SIZE
Q903
VIDEO
AMP
Q904
VIDEO
DRIVE
Q902
H OUT
C909
H SIZE
T901
FBT
EVF
4.9V
4
5
6
2
3
7
1
8
D903
DUMPER
RV904
BRIGHT
W901
1
3
2
5
G1
H
H
HV
G2
V901
PICTURE TUBE
CN902
4
3
2
1
DH2
DH1
DV2
DV1
EVF 4.9V
L903
HLC
DEFLECTION YOKE
H
V
09

## 3-9. POWER SUPPLY BLOCK DIAGRAM

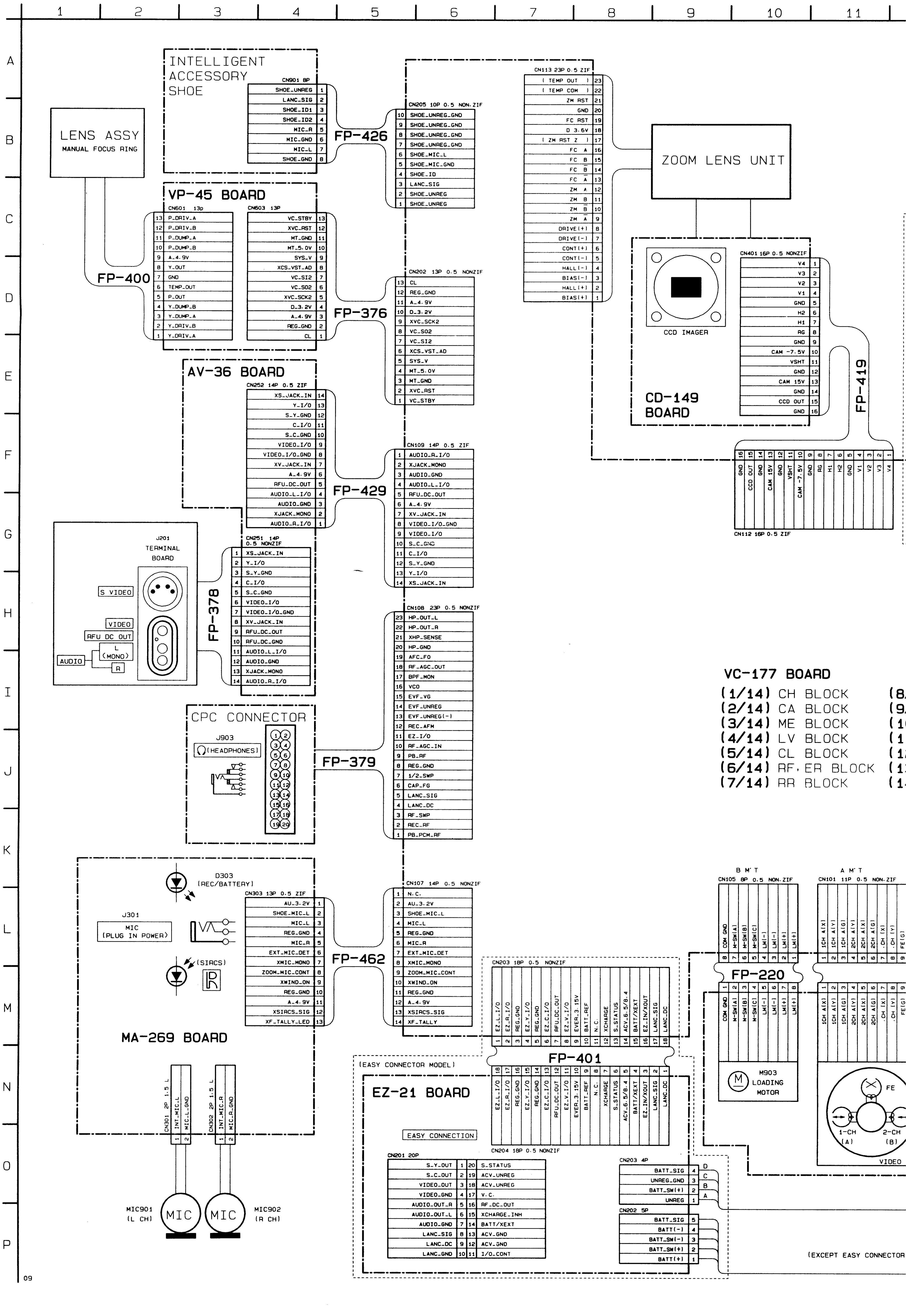

J901 BATTERY TERMINAL
BATT (+)
BATT (-)
BATT SIG
DD-87 BOARD (SEE PAGE 4-111)
CN1501
EXCEPT EASY CONNECTOR MODEL
EZ-21 BOARD (SEE PAGE 4-96)
CN202
BATT SW (+)
BATT SW (-)
Q201, 202
CN203
IC201
BATTERY CHARGE CONTROL
Q205-211, 215-217
XCHARGE
BATT REF
EVER 3.15V
CN201
ACV UNREG
VC
Q204
ACV 6.5/X8.4
EASY CONNECTOR
XCHARGE INH
BATT/XEXT
Q218
RFU DC OUT
LANC DC
CN204
EASY CONNECTOR MODEL
PS1504 LIGHT UNREG
PS1503 MT UNREG
PS1502 VTR UNREG1
PS1501 VTR UNREG 2
L1503
L1501
L1502
IC110
DC/DC CONVERTER
OUTPUT1
FB1
VCC
CT
RT
OUTPUT4
MOS GATE4
FB4
OUTPUT VCC 13
OUTPUT VCC 24
COMP
OUTPUT3
FB3
OUTPUT2
FB2
STBY3
STBY
VREF
DRUM/CAPSTAN PWM DRIVE
OUTPUT VCC 56
Q1501, 1502 DRUM VS CAP VS SWITCHING
Q1503 SWITCHING
L1506
Q1504 SWITCHING
L1507
Q1505 SWITCHING
L1510
L1509
L1508
Q1506 SWITCHING
T1501
D1501
Q1507-1510 -7.5V REG
L1511
Q1511 EMERGENCY DETECT
Q1512 SWITCHING
L1512
L1516
L1515
L1514
L1513
CCD-TR2200E
Q1513 EMERGENCY DETECT
(COLOR EVF MODEL)
Q1515
Q1516, 1517 1520
Q1514
Q1518, 1519, 1521
CN1503
BATT SIG
MT UNREG
VTR UNREG
LIGHT UNREG
XLIGHT ON
EVF UNREG
MT 5V
A 3.2V
D 3.2V
AUDIO 3.2V
CAM -7.5V
CAM 15V
AUDIO 4.9V
RP 4.9V
A 4.9V
SW EVF 4.9V
SW EVF 15V
VTR DD ON
EVF DD ON
INTELLIGENT ACCESSORY SHOE
SHOE UNREG
CN205
CN106
VC-177 BOARD (SEE PAGE 4-18, 2
36, 39, 42, 45, 50,
Q1601-16
CAM DD ON
IC251, 25
IRIS DRIVE HALL AMP
L252
IC202
TIMING GENERATOR
IC203
S/H AGC
IC122
LOADING MOTOR DRIVE, SENSOR AMP
MT 5V
VTR UNREG
R894
CN102
SENSOR VCC
T REEL, S REEL, SENSOR
H001
H002
RFU DC
09

EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E, CC886
B/W EVF MODEL:CCD-TR2200E, CC886
COLOR EVF MODEL:CCD-TR2300E/TR3300E
TBC&DNR MODEL:CCD-TR2200E/TR2300E, CC886
DIGITAL MEMORY MODEL:CCD-TR3300E


VC-177 BOARD (SEE PAGE 4-18, 22, 25, 29, 31, 36, 39, 42, 45, 50, 53, 56, 59, 63)
CD-149 BOARD (SEE PAGE 4-8)
IC401
CCD IMAGER
(DIGITAL MEMORY MODEL)
MM-32 BOARD (SEE PAGE 4-79)
IC701-703
CNR MEMORY
CPC (FOR CHECK)
FP-379 (FLEXIBLE) (SEE PAGE 4-65)
EVF UNREG
EVF UNREG (-)
LANC DC
MA-269 BOARD (SEE PAGE 4-93)
IC301
MIC AMP
IC303
REMOTE COMMANDER RECEIVER
(COLOR EVF MODEL)
LB-45 BOARD (SEE PAGE 4-101)
Q801, T801
INVERTER DC/AC CONVERTER
HIGH
ND801 BACK LIGHT
CN801
CN853
IC851
DC/AC CONV.
R844
SENSOR IN A
POWER SAVE SENSOR
VF-96 BOARD
HVDD
RGT
VVDD
CN902
LCD PANEL
CN901
IC852
13.5V/12V REG
L853
EVF 13.5V
EVF 12.0V
EVF 4.9V
D 3.2V
SENSOR VCC 3.2V
IC901
D/A CONVERTER (EVF)
L854
POWER SAVE
CN852
TIMING GENERATOR
RGB DECODER
IC904
IC902
VF-95 BOARD
IC853-855, 857
(SEE PAGE 4-101)
(SEE PAGE 4-103)
CN851
EVF UNREG
D 4.9V
SW EVF 15V
SW EVF 4.9V
D 3.2V
CN111
CN107
AU 3.2V
A 4.9V
CN108
CN303
CN204
CN701
CN113
IRIS METER
DRIVE (+)
Q1601-1604
CAM -7.5V
CAM 15V
CN112
CN401
CAM DD ON
DE UNREG
CN205
CN1503
CN106
R2070, 2071
IC251, 253
IRIS DRIVE HALL AMP
IC252, 255
ZOOM/FOCUS DRIVE
IC104
CHARACTER GENERATOR
IC800
RGB DECODER D/A CONVERTER
(COLOR EVF MODEL)
IC116
EEPROM
L252
IC202
TIMING GENERATOR
IC151
A/D CONVERTER
IC114
ZOOM TBC PROCESS
IC105
Y PROCESS
IC102
MOD/DEMOD EMPH/DEEMPH D/A CONV.
IC117
VTR/CAMERA/SERVO CONTROL
IC109
AFM PROCESS
IC203
S/H AGC
IC152
CAMERA Y, C PROCESS
IC115
CNR PROCESS
(TBC&DNR MODEL)
IC106
C PROCESS
IC103
A/D CONVERTER
IC120
ATF SERVO
EASY CONNECTOR MODEL
IC571
AUDIO I/O SWITCH
EASY CONNECTOR MODEL
IC600
VIDEO I/O SWITCH
IC108
D/A CONVERTER (EVR)
IC129
VIDEO I/O AMP
VP-45 BOARD
MT 5.0V
IC605-608
Q603
ACTIVRE PRISM ACTUATOR DRIVE
A 4.9V
CN601
ACTIVE PRISM ACTUATOR
IC609
A/D CONVERTOR
IC611
STEADY SHOT CONTROL
IC601-604
Q602
PITCH,YAW SENSOR AMP
EVER 3.15V
A 4.9V
CN202
CN603
(SEE PAGE 4-10)
(B/W EVF MODEL)
VF-104 BOARD
IC901
SW EVF 4.9V
CRT DRIVE
CN901
(SEE PAGE 4-106)
HI-40 BOARD (SEE PAGE 4-69, 72, 75)
IC128
VSC
IC1954
EEPROM
A 4.9V
D 3.2V
DC PACK SW
BATT SIG
LIGHT ON
VTR DD ON
EVF DD ON
VTR UNREG
CAM DD ON
EVER 3.15V
LED 5V
IC1951
INITIAL RESET, BACKUP VCC
V BAT
VRD
V IN
V OUT
Q1951-1955
IC1955
LANC I/O
UNREG
VCC
LANC DC
CN502
D 3.2V
CF BLOCK (SEE PAGE 4-85)
CN103
FOCUS RING
S101 POWER
VTR ← OFF → CAMERA
XVTR MODE SW
STBY SW CF
BL 4.9V
Q505, 509
CN101
CN102
(SEE PAGE 4-85)
LC-53 BOARD
CN752
LCD INDICATOR
R755
R752
CN751
CN753
BACK LIGHT
IC122
LOADING MOTOR DRIVE, SENSOR AMP
IC121
DRUM MOTOR DRIVE
IC101
REC/PB AMP
MT 5V
VTR UNREG
R894
CN102
CN103
CN101
CN109
L1003
L1004
SENSOR VCC
VCC2
VCC1
1CH
2CH
T REEL, S REEL SENSOR
H001
H002
CAPSTAN MOTOR
M902
VIDEO HEAD
B-MECHA
RFU DC OUT
LANC DC
XCHARGE
BATT REF
EVER 3.15V
ACV 6.5/X8.4
BATT/XEXT
CN203
CN110
CN501
IC1952
MODE CONTROL
XCHARGE
BATT REF
BACK UP VCC
ACV 6.5/X8.4
BATT/EXT
LIGHT ON
BATT SIG
XSHOE ON
VTR DD ON
EVF DD ON
CAM DD ON
XVTR MODE SW
XCAM STBY SW
Q503, 504
D 3.2V
LED ON
CN151
LED
VTR FUNCTION SW ZOOM SW
FK-67 BOARD
(SEE PAGE 4-82)
STBY SW HI
STBY SW CF
STANDBY
ON
OFF
FP-457 (FLEXIBLE)
(SEE PAGE 4-76)
LANC DC
LANC
CN503
FP-378 (FLEXIBLE)
RFU DC OUT
(SEE PAGE 4-89)
A 4.9V
Q251, 252
CURRENT LIMITER
RFU DC OUT
CN251
CN252
AV-36 BOARD
(SEE PAGE 4-89)
EASY CONNECTOR MODEL
LI-57 BOARD
BH101
LITHIUM BATTERY
CN101
LI 3V
CN504
(SEE PAGE 4-87)

# SECTION 4
# PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS

## 4-1. FRAME SCHEMATIC DIAGRAM



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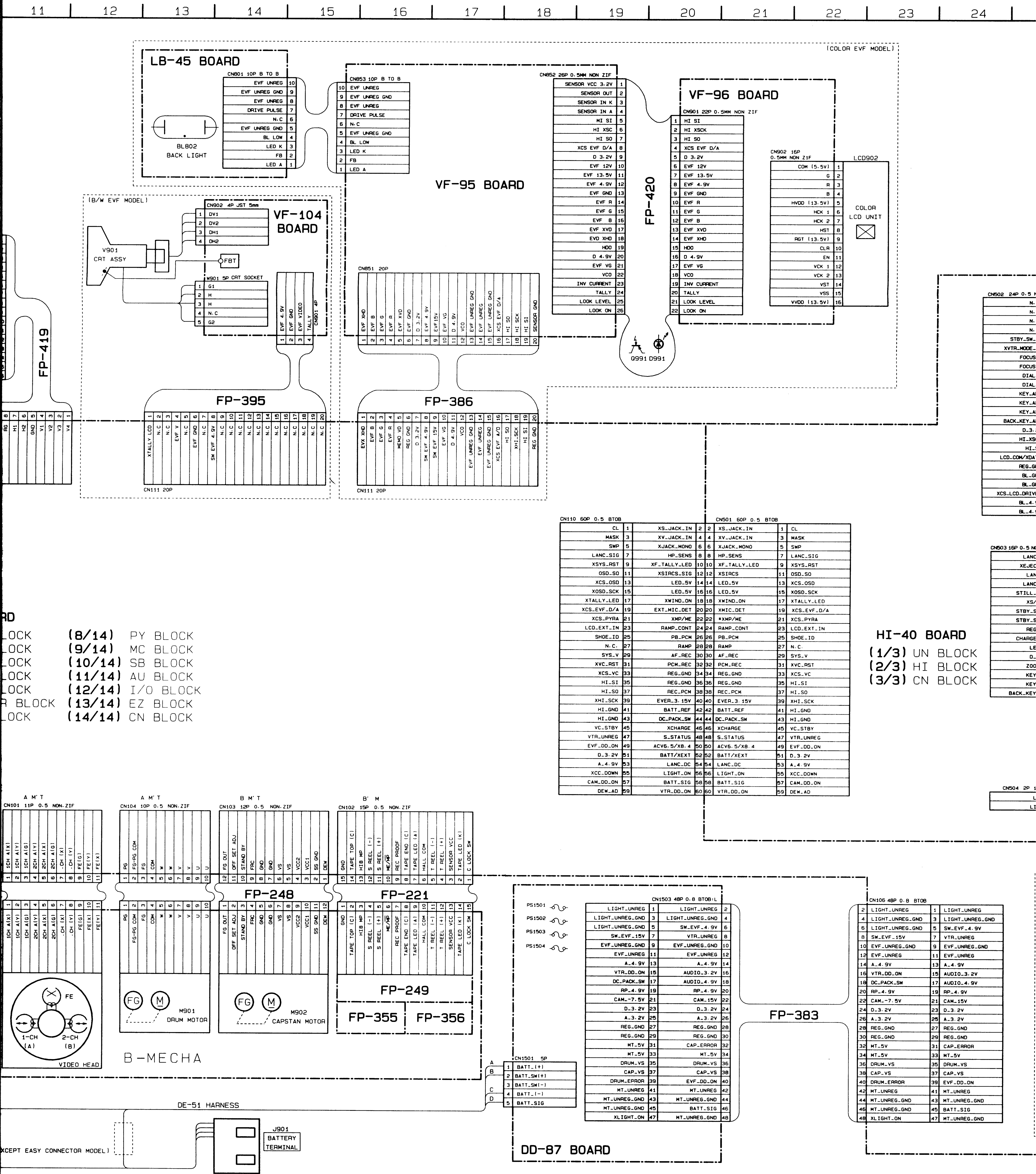
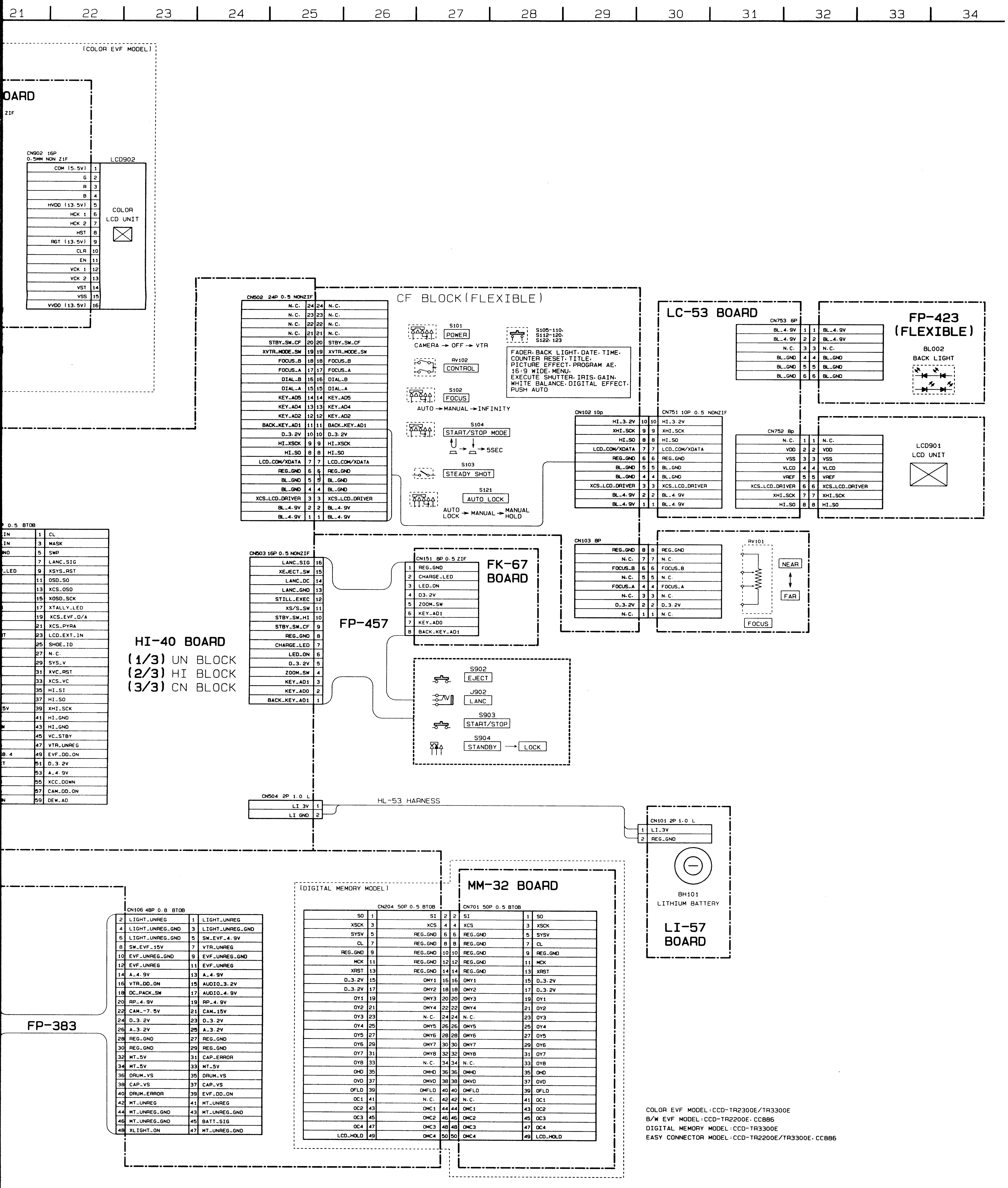
10
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
INTELLIGENT ACCESSORY SHOE
CN901 8P
LENS ASSY
MANUAL FOCUS RING
FP-426
CN205 10P 0.5 NON.ZIF
CN113 23P 0.5 ZIF
ZOOM LENS UNIT
VP-45 BOARD
CN601 13p
CN603 13P
FP-400
FP-376
CN202 13P 0.5 NONZIF
CCD IMAGER
CN401 16P 0.5 NONZIF
CD-149 BOARD
FP-419
AV-36 BOARD
CN252 14P 0.5 ZIF
FP-429
CN109 14P 0.5 NONZIF
CN112 16P 0.5 ZIF
J201 TERMINAL BOARD
CN251 14P 0.5 NONZIF
FP-378
S VIDEO
VIDEO
RFU DC OUT
AUDIO
L (MONO)
R
CN108 23P 0.5 NONZIF
CPC CONNECTOR
J903
(HEADPHONES)
FP-379
VC-177 BOARD
(1/14) CH BLOCK
(2/14) CA BLOCK
(3/14) ME BLOCK
(4/14) LV BLOCK
(5/14) CL BLOCK
(6/14) RF, ER BLOCK
(7/14) RR BLOCK
D303 (REC/BATTERY)
CN303 13P 0.5 ZIF
J301 MIC (PLUG IN POWER)
(SIRCS)
FP-462
CN107 14P 0.5 NONZIF
MA-269 BOARD
CN301 2P 1.5 L
CN302 2P 1.5 L
MIC901 (L CH)
MIC902 (R CH)
MIC
B M'T
CN105 8P 0.5 NON.ZIF
A M'T
CN101 11P 0.5 NON.ZIF
FP-220
CN203 18P 0.5 NONZIF
FP-401
(EASY CONNECTOR MODEL)
EZ-21 BOARD
EASY CONNECTION
CN204 18P 0.5 NONZIF
CN201 20P
CN203 4P
CN202 5P
M903 LOADING MOTOR
1-CH (A)
2-CH (B)
VIDEO
(EXCEPT EASY CONNECTOR
09


11
12
13
14
15
16
17
18
19
20
21
22
23
24
(COLOR EVF MODEL)
LB-45 BOARD
CN801 10P B TO B
BL802
BACK LIGHT
CN853 10P B TO B
VF-95 BOARD
CN852 26P 0.5MM NON ZIF
FP-420
VF-96 BOARD
CN901 22P 0.5MM NON ZIF
CN902 16P 0.5MM NON ZIF
LCD902
COLOR LCD UNIT
Q991 D991
(B/W EVF MODEL)
CN902 4P JST 5mm
VF-104 BOARD
V901 CRT ASSY
FBT
M901 5P CRT SOCKET
CN901 4P
CN851 20P
FP-419
FP-395
FP-386
CN111 20P
CN111 20P
CN110 60P 0.5 BTOB
CN501 60P 0.5 BTOB
CN502 24P 0.5
CN503 16P 0.5
CN504 2P
HI-40 BOARD
(1/3) UN BLOCK
(2/3) HI BLOCK
(3/3) CN BLOCK
RD
LOCK (8/14) PY BLOCK
LOCK (9/14) MC BLOCK
LOCK (10/14) SB BLOCK
LOCK (11/14) AU BLOCK
LOCK (12/14) I/O BLOCK
R BLOCK (13/14) EZ BLOCK
LOCK (14/14) CN BLOCK
A M'T CN101 11P 0.5 NON.ZIF
A M'T CN104 10P 0.5 NON.ZIF
B M'T CN103 12P 0.5 NON.ZIF
B' M CN102 15P 0.5 NON.ZIF
FP-248
FP-221
FP-249
FP-355
FP-356
FE
1-CH (A)
2-CH (B)
VIDEO HEAD
M901 DRUM MOTOR
M902 CAPSTAN MOTOR
B-MECHA
CN1503 48P 0.8 BTOB:L
PS1501
PS1502
PS1503
PS1504
CN1501 5P
BATT_(+)
BATT_SW(+)
BATT_SW(-)
BATT_(-)
BATT_SIG
FP-383
CN106 48P 0.8 BTOB
DD-87 BOARD
DE-51 HARNESS
J901 BATTERY TERMINAL
XCEPT EASY CONNECTOR MODEL)



21
22
23
24
25
26
27
28
29
30
31
32
33
34
(COLOR EVF MODEL)
OARD
ZIF
CN902 16P 0.5MM NON ZIF
LCD902
COM (5.5V) 1
G 2
R 3
B 4
HVDD (13.5V) 5
HCK 1 6
HCK 2 7
HST 8
RGT (13.5V) 9
CLR 10
EN 11
VCK 1 12
VCK 2 13
VST 14
VSS 15
VVDD (13.5V) 16
COLOR LCD UNIT
CF BLOCK(FLEXIBLE)
CN502 24P 0.5 NONZIF
N.C. 24 24 N.C.
N.C. 23 23 N.C.
N.C. 22 22 N.C.
N.C. 21 21 N.C.
STBY_SW_CF 20 20 STBY_SW_CF
XVTR_MODE_SW 19 19 XVTR_MODE_SW
FOCUS_B 18 18 FOCUS_B
FOCUS_A 17 17 FOCUS_A
DIAL_B 16 16 DIAL_B
DIAL_A 15 15 DIAL_A
KEY_AD5 14 14 KEY_AD5
KEY_AD4 13 13 KEY_AD4
KEY_AD2 12 12 KEY_AD2
BACK_KEY_AD1 11 11 BACK_KEY_AD1
D_3.2V 10 10 D_3.2V
HI_XSCK 9 9 HI_XSCK
HI_SO 8 8 HI_SO
LCD_COM/XDATA 7 7 LCD_COM/XDATA
REG_GND 6 6 REG_GND
BL_GND 5 5 BL_GND
BL_GND 4 4 BL_GND
XCS_LCD_DRIVER 3 3 XCS_LCD_DRIVER
BL_4.9V 2 2 BL_4.9V
BL_4.9V 1 1 BL_4.9V
S101 POWER
CAMERA → OFF → VTR
RV102 CONTROL
S102 FOCUS
AUTO → MANUAL → INFINITY
S104 START/STOP MODE
→ 5SEC
S103 STEADY SHOT
S121 AUTO LOCK
AUTO LOCK → MANUAL → MANUAL HOLD
S105-110, S112-120, S122, 123
FADER, BACK LIGHT, DATE, TIME, COUNTER RESET, TITLE, PICTURE EFFECT, PROGRAM AE, 16:9 WIDE, MENU, EXECUTE SHUTTER, IRIS, GAIN, WHITE BALANCE, DIGITAL EFFECT, PUSH AUTO
LC-53 BOARD
CN753 6P
BL_4.9V 1 1 BL_4.9V
BL_4.9V 2 2 BL_4.9V
N.C. 3 3 N.C.
BL_GND 4 4 BL_GND
BL_GND 5 5 BL_GND
BL_GND 6 6 BL_GND
FP-423 (FLEXIBLE)
BL002 BACK LIGHT
CN102 10p
CN751 10P 0.5 NONZIF
HI_3.2V 10 10 HI_3.2V
XHI_SCK 9 9 XHI_SCK
HI_SO 8 8 HI_SO
LCD_COM/XDATA 7 7 LCD_COM/XDATA
REG_GND 6 6 REG_GND
BL_GND 5 5 BL_GND
BL_GND 4 4 BL_GND
XCS_LCD_DRIVER 3 3 XCS_LCD_DRIVER
BL_4.9V 2 2 BL_4.9V
BL_4.9V 1 1 BL_4.9V
CN752 8p
N.C. 1 1 N.C.
VDD 2 2 VDD
VSS 3 3 VSS
VLCD 4 4 VLCD
VREF 5 5 VREF
XCS_LCD_DRIVER 6 6 XCS_LCD_DRIVER
XHI_SCK 7 7 XHI_SCK
HI_SO 8 8 HI_SO
LCD901 LCD UNIT
CN103 8P
REG_GND 8 8 REG_GND
N.C. 7 7 N.C.
FOCUS_B 6 6 FOCUS_B
N.C. 5 5 N.C.
FOCUS_A 4 4 FOCUS_A
N.C. 3 3 N.C.
D_3.2V 2 2 D_3.2V
N.C. 1 1 N.C.
RV101
NEAR
FAR
FOCUS
CN503 16P 0.5 NONZIF
LANC_SIG 16
XEJECT_SW 15
LANC_DC 14
LANC_GND 13
STILL_EXEC 12
XS/S_SW 11
STBY_SW_HI 10
STBY_SW_CF 9
REG_GND 8
CHARGE_LED 7
LED_ON 6
D_3.2V 5
ZOOM_SW 4
KEY_AD1 3
KEY_AD0 2
BACK_KEY_AD1 1
FP-457
CN151 8P 0.5 ZIF
1 REG_GND
2 CHARGE_LED
3 LED_ON
4 D3.2V
5 ZOOM_SW
6 KEY_AD1
7 KEY_AD0
8 BACK_KEY_AD1
FK-67 BOARD
S902 EJECT
J902 LANC
S903 START/STOP
S904 STANDBY → LOCK
HI-40 BOARD
(1/3) UN BLOCK
(2/3) HI BLOCK
(3/3) CN BLOCK
P 0.5 BTOB
1 CL
3 MASK
5 SWP
7 LANC_SIG
9 XSYS_RST
11 OSD_SO
13 XCS_OSD
15 XOSD_SCK
17 XTALLY_LED
19 XCS_EVF_D/A
21 XCS_PYRA
23 LCD_EXT_IN
25 SHOE_ID
27 N.C.
29 SYS_V
31 XVC_RST
33 XCS_VC
35 HI_SI
37 HI_SO
39 XHI_SCK
41 HI_GND
43 HI_GND
45 VC_STBY
47 VTR_UNREG
49 EVF_DD_ON
51 D_3.2V
53 A_4.9V
55 XCC_DOWN
57 CAM_DD_ON
59 DEW_AD
CN504 2P 1.0 L
LI 3V 1
LI GND 2
HL-53 HARNESS
CN101 2P 1.0 L
1 LI_3V
2 REG_GND
BH101 LITHIUM BATTERY
LI-57 BOARD
FP-383
CN106 48P 0.8 BTOB
2 LIGHT_UNREG 1 LIGHT_UNREG
4 LIGHT_UNREG_GND 3 LIGHT_UNREG_GND
6 LIGHT_UNREG_GND 5 SW_EVF_4.9V
8 SW_EVF_15V 7 VTR_UNREG
10 EVF_UNREG_GND 9 EVF_UNREG_GND
12 EVF_UNREG 11 EVF_UNREG
14 A_4.9V 13 A_4.9V
16 VTR_DD_ON 15 AUDIO_3.2V
18 DC_PACK_SW 17 AUDIO_4.9V
20 RP_4.9V 19 RP_4.9V
22 CAM_-7.5V 21 CAM_15V
24 D_3.2V 23 D_3.2V
26 A_3.2V 25 A_3.2V
28 REG_GND 27 REG_GND
30 REG_GND 29 REG_GND
32 MT_5V 31 CAP_ERROR
34 MT_5V 33 MT_5V
36 DRUM_VS 35 DRUM_VS
38 CAP_VS 37 CAP_VS
40 DRUM_ERROR 39 EVF_DD_ON
42 MT_UNREG 41 MT_UNREG
44 MT_UNREG_GND 43 MT_UNREG_GND
46 MT_UNREG_GND 45 BATT_SIG
48 XLIGHT_ON 47 MT_UNREG_GND
(DIGITAL MEMORY MODEL)
MM-32 BOARD
CN204 50P 0.5 BTOB
CN701 50P 0.5 BTOB
SO 1 | SI 2 2 SI | 1 SO
XSCK 3 | XCS 4 4 XCS | 3 XSCK
SYSV 5 | REG_GND 6 6 REG_GND | 5 SYSV
CL 7 | REG_GND 8 8 REG_GND | 7 CL
REG_GND 9 | REG_GND 10 10 REG_GND | 9 REG_GND
MCK 11 | REG_GND 12 12 REG_GND | 11 MCK
XRST 13 | REG_GND 14 14 REG_GND | 13 XRST
D_3.2V 15 | OMY1 16 16 OMY1 | 15 D_3.2V
D_3.2V 17 | OMY2 18 18 OMY2 | 17 D_3.2V
OY1 19 | OMY3 20 20 OMY3 | 19 OY1
OY2 21 | OMY4 22 22 OMY4 | 21 OY2
OY3 23 | N.C. 24 24 N.C. | 23 OY3
OY4 25 | OMY5 26 26 OMY5 | 25 OY4
OY5 27 | OMY6 28 28 OMY6 | 27 OY5
OY6 29 | OMY7 30 30 OMY7 | 29 OY6
OY7 31 | OMY8 32 32 OMY8 | 31 OY7
OY8 33 | N.C. 34 34 N.C. | 33 OY8
OHD 35 | OMHD 36 36 OMHD | 35 OHD
OVD 37 | OMVD 38 38 OMVD | 37 OVD
OFLD 39 | OMFLD 40 40 OMFLD | 39 OFLD
OC1 41 | N.C. 42 42 N.C. | 41 OC1
OC2 43 | OMC1 44 44 OMC1 | 43 OC2
OC3 45 | OMC2 46 46 OMC2 | 45 OC3
OC4 47 | OMC3 48 48 OMC3 | 47 OC4
LCD_HOLD 49 | OMC4 50 50 OMC4 | 49 LCD_HOLD

COLOR EVF MODEL:CCD-TR2300E/TR3300E
B/W EVF MODEL:CCD-TR2200E, CC886
DIGITAL MEMORY MODEL:CCD-TR3300E
EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E, CC886

## THIS NOTE IS COMMON FOR PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAMS.

**(In addition to this , the necessary note is printed in each block.)**

- **For printed wiring boards.**
- ▨ : Pattern from the side which enables seeing. (The other layers'patterns are not indicated.)
- Circled numbers refer to waveforms.
- (B) or (F), etc. of capacitors indicate the temperature characteristics.
- Through hole is omitted.

| * Caution: | |
|---|---|
| Pattern face side: (Conductor Side) | Parts on the pattern face side seen from the pattern face are indicated. |
| Parts face side: (Component side) | Parts on the parts face side seen from the parts face are indicated. |

- **For schematic diagrams.**
- Caution when replacing chip parts.
  New parts must be attached after removal of chip.
  Be careful not to heat the minus side of tantalum capacitor, because it is damaged by the heat.
- All resistors are in ohms, 1/4W unless otherwise noted.
  Chip resistor are 1/16W unless otherwise noted.
  kΩ : 1000Ω , MΩ : 1000kΩ .
- All capacitors are in μF unless otherwise noted. pF: μμF.
  50V or less are not indicated except for electrolytics and tantalums.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊟ : nonflammable resistor.
- ☐ : panel designation.
- △ : internal component.
- ☐ : adjustment for repeair.
- ━━ : B+ Line.
- - - - : B– Line.
- ⇨ : IN/OUT direction of (+, – ) B LINE.
- Circled numbers refer to waveforms.

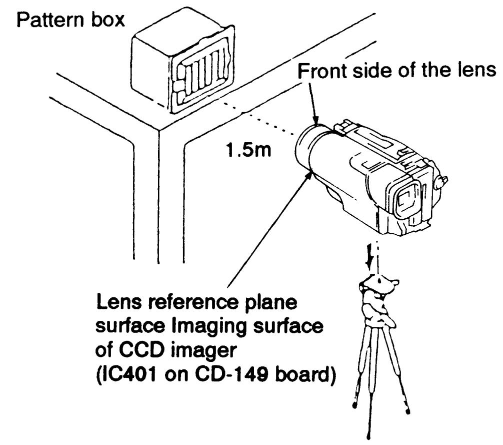
**Note:**
The components identi- fied by mark ⚠ or dotted line with mark ⚠ are critical for safty.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

Refer to page 2 as models and classification of table for difference of functions.

- **Measuring conditions voltage value and waveform. (CAMERA block)**
- The object is color bar chart of pattern box.
- Voltages are dc between ground and measurement points. Readings are taken with a digital multimeter (DC 10MΩ ).
- Voltage variations may be noted due to normal production tolerances.

1. Connection


Pattern box
Front side of the lens
1.5m
Lens reference plane surface Imaging surface of CCD imager (IC401 on CD-149 board)

2. Adjust the distance so that the output waveform of Fig. a and the Fig. b can be obtain.

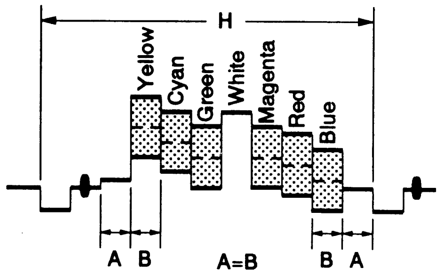

H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A B
A=B
B A

Fig. a (Video output terminal output waveform)

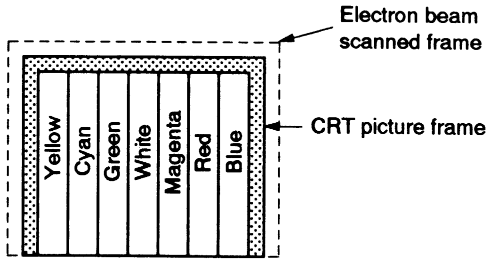

Electron beam scanned frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. b (Picture on monitor TV)

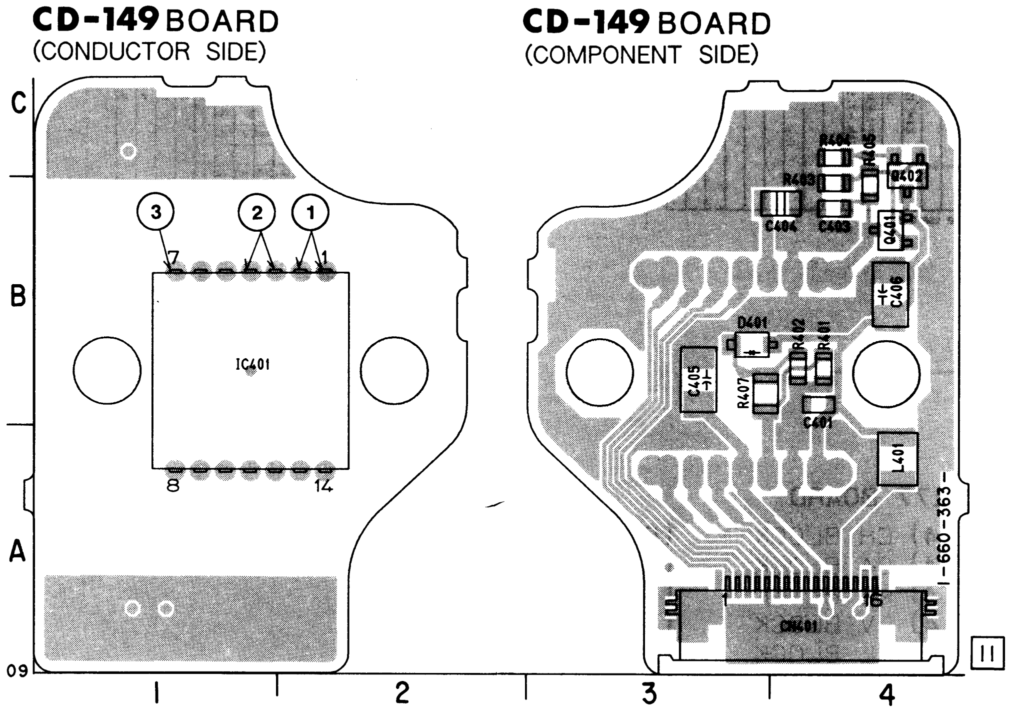
**(VIDEO, SERVO/SYSTEM CONTROL, MODE CONTROL, AUDIO, EVF mode)**

- Voltages are dc between ground and measurement points.
- Readings are taken with a color-bar signal input.
- Readings are taken with a digital multimeter (DC10MΩ ).
- Voltage variations may be noted due to normal production tolerances.

**Note:** Refer to "3-1-4. Connecting the Equipments" and "3-1-6. How to Set the REC Mode in the Model without REC switch" in VIDEO SECTION ADJUSTMENT. (See page 6–33)

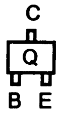
## CD-149 (CCD IMAGER) PRINTED WIRING BOARD

— Ref No. CD-149 BOARD: 3,000 series —

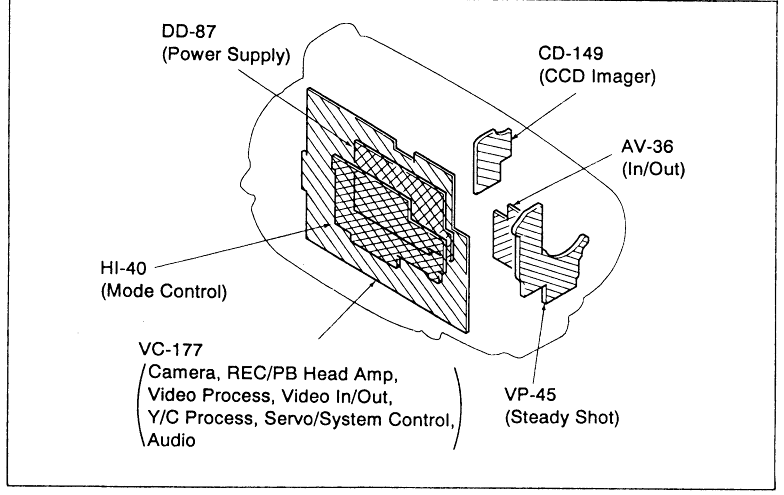

CD-149 BOARD
(CONDUCTOR SIDE)
CD-149 BOARD
(COMPONENT SIDE)
C
B
A
1
2
3
4
③
②
①
7
1
8
14
IC401
R404
R405
R403
Q402
C404
C403
Q401
C406
D401
R402
R401
C405
R407
C401
L401
CN401
16
1-660-363-
09
11

| CD-149 BOARD | |
|---|---|
| C401 | B-4 |
| C405 | B-3 |
| C406 | B-4 |
| CN401 | A-4 |
| L401 | A-4 |
| Q401 | B-4 |
| Q402 | C-4 |
| R403 | C-4 |
| R404 | C-4 |
| R407 | B-3 |

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor

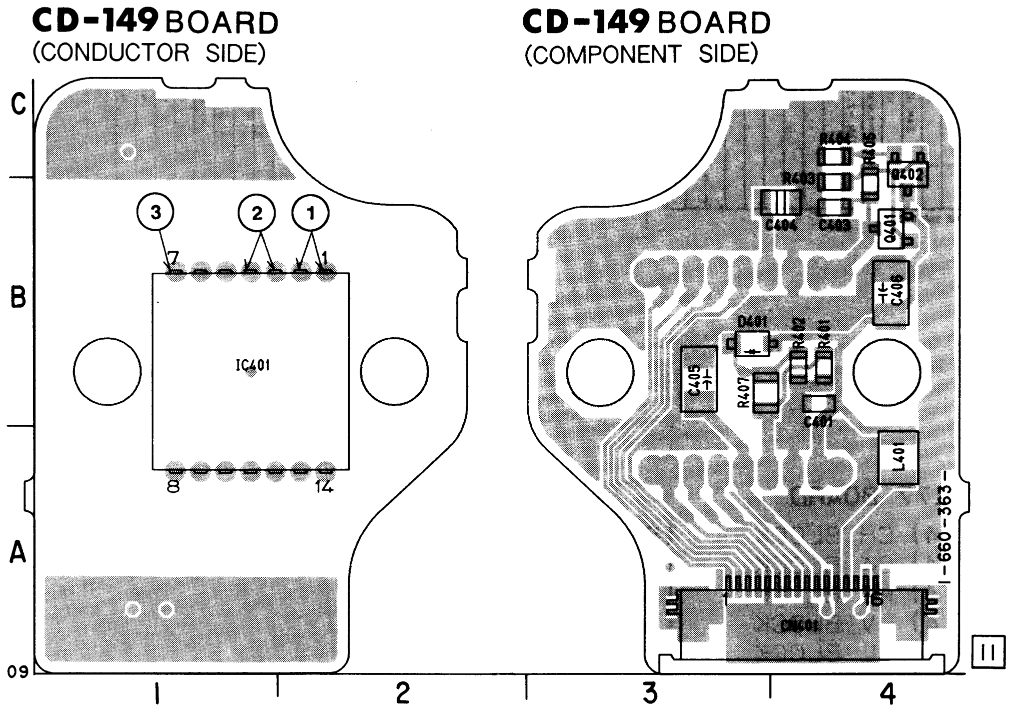


There are few cases that the part isn't mounted in this model is printed on this diagram.


DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio
VP-45
(Steady Shot)

## CD-149 (CCD IMAGER) PRINTED WIRING BOARD

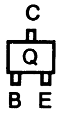
— Ref No. CD-149 BOARD: 3,000 series —



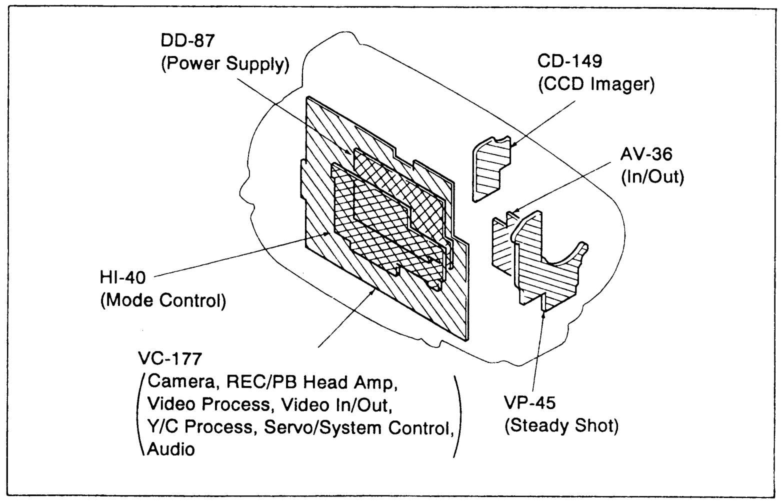
CD-149 BOARD
(CONDUCTOR SIDE)
CD-149 BOARD
(COMPONENT SIDE)
C
B
A
09
1
2
3
4
③
②
①
7
8
14
IC401
R404
R405
R403
Q402
C404
C403
Q401
C406
D401
R402
C405
R407
C401
L401
CN401
16
1-660-363-
11

| CD-149 BOARD | |
|---|---|
| C401 | B-4 |
| C405 | B-3 |
| C406 | B-4 |
| CN401 | A-4 |
| L401 | A-4 |
| Q401 | B-4 |
| Q402 | C-4 |
| R403 | C-4 |
| R404 | C-4 |
| R407 | B-3 |

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



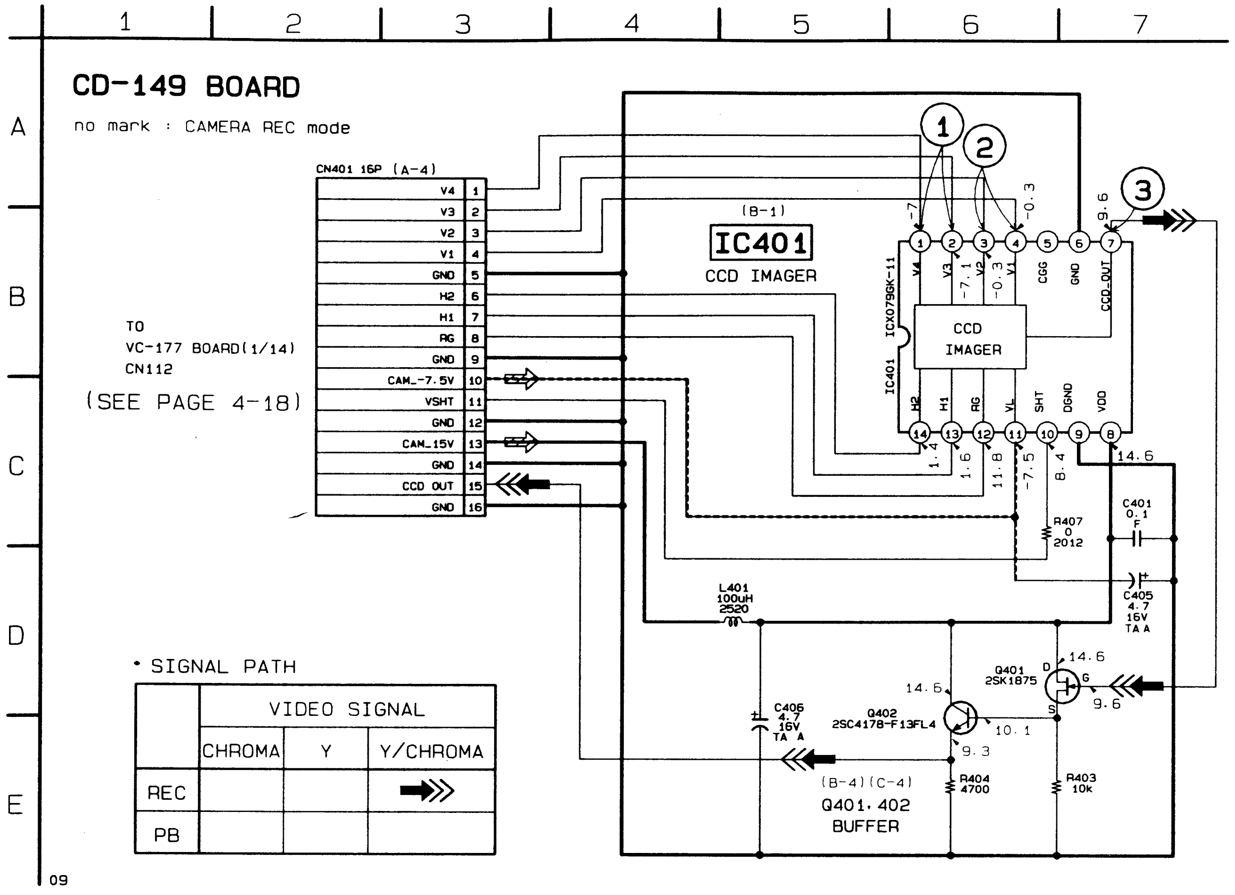
There are few cases that the part isn't mounted in this model is printed on this diagram.



DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
(Camera, REC/PB Head Amp, Video Process, Video In/Out, Y/C Process, Servo/System Control, Audio)
VP-45
(Steady Shot)

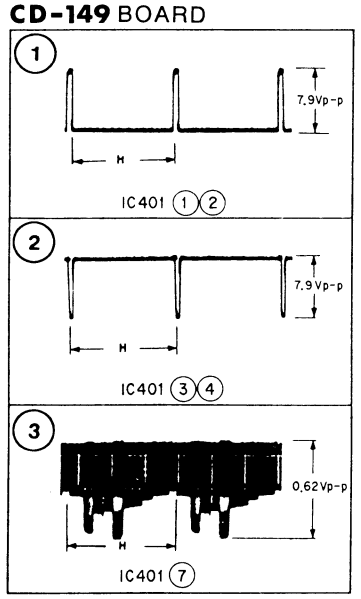
## CD-149 (CCD IMAGER) SCHEMATIC DIAGRAM

— Ref No. CD-149 BOARD: 3,000 series —



1
2
3
4
5
6
7
A
B
C
D
E
CD-149 BOARD
no mark : CAMERA REC mode
CN401 16P (A-4)
V4 1
V3 2
V2 3
V1 4
GND 5
H2 6
H1 7
RG 8
GND 9
CAM_-7.5V 10
VSHT 11
GND 12
CAM_15V 13
GND 14
CCD OUT 15
GND 16
TO
VC-177 BOARD(1/14)
CN112
(SEE PAGE 4-18)
(B-1)
IC401
CCD IMAGER
ICX079GK-11
IC401
CCD
IMAGER
V4 V3 V2 V1 CGG GND CCD OUT
H2 H1 RG VL SHT OGND VDD
-7.1
-0.3
-7
9.6
1.4
1.6
11.8
-7.5
8.4
14.6
R407
0
2012
C401
0.1
F
C405
4.7
16V
TA A
L401
100uH
2520
C406
4.7
16V
TA A
Q402
2SC4178-F13FL4
Q401
2SK1875
14.6
14.6
9.6
10.1
9.3
R404
4700
R403
10k
(B-4)(C-4)
Q401,402
BUFFER
• SIGNAL PATH
09

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | | | ➡》 |
| PB | | | |



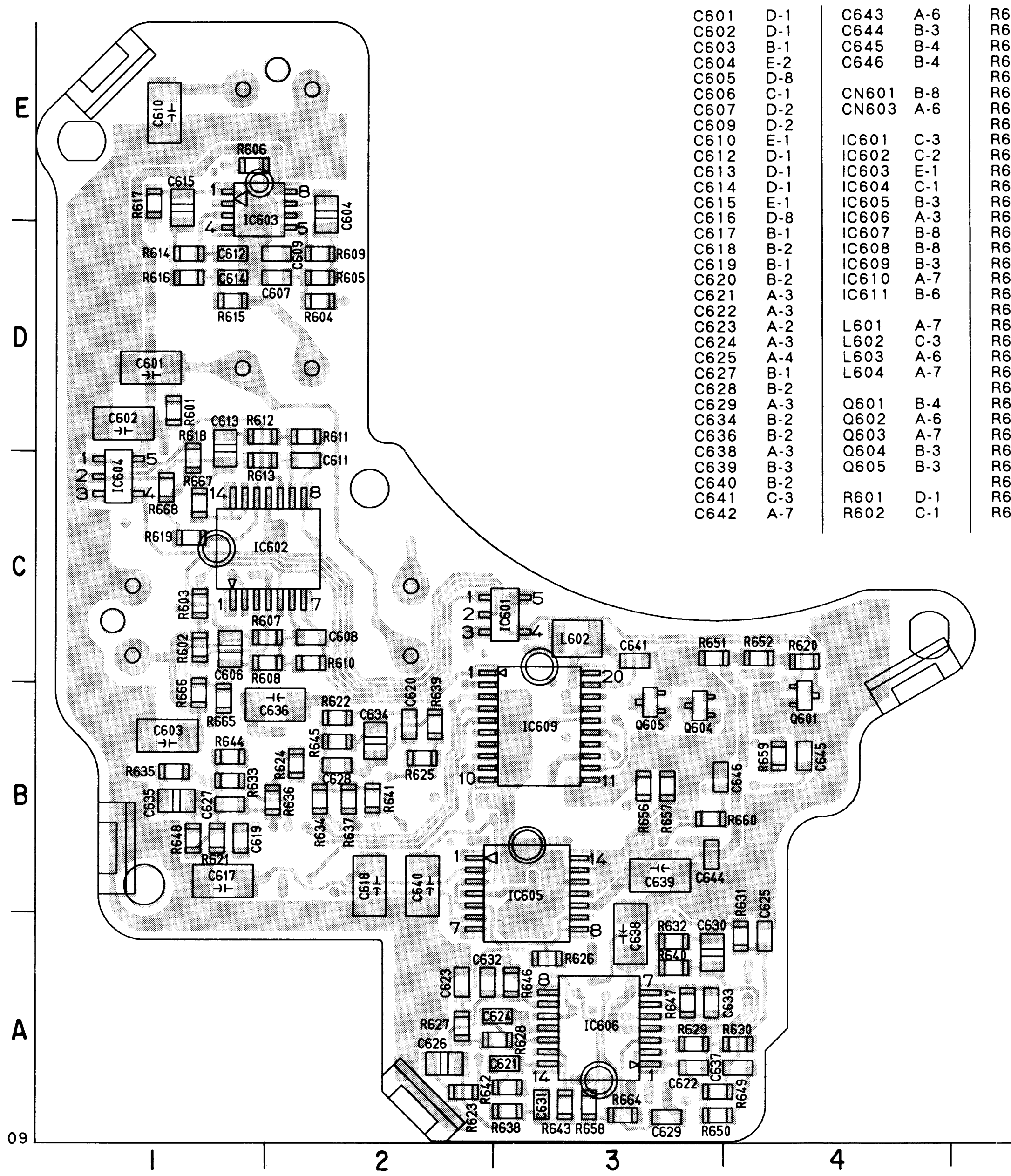
### Note on the CCD Imager replacement

- The CCD imager is not mounted for the already mounted CD-149 board supplied as the repair parts.
  When replacing the CD-149 board, remove the CCD imager from the old board and install on the new board.
- Perform all adjustments of the camera block when the CCD imager has been replaced.
- Handle the CCD imager with attention such as MOS IC as it may be broken by static electricity in the structure.
  Also, prevent the receiving light section from dust attached and strong light.

## VP-45 (STEADY SHOT) PRINTED WIRING BOARD

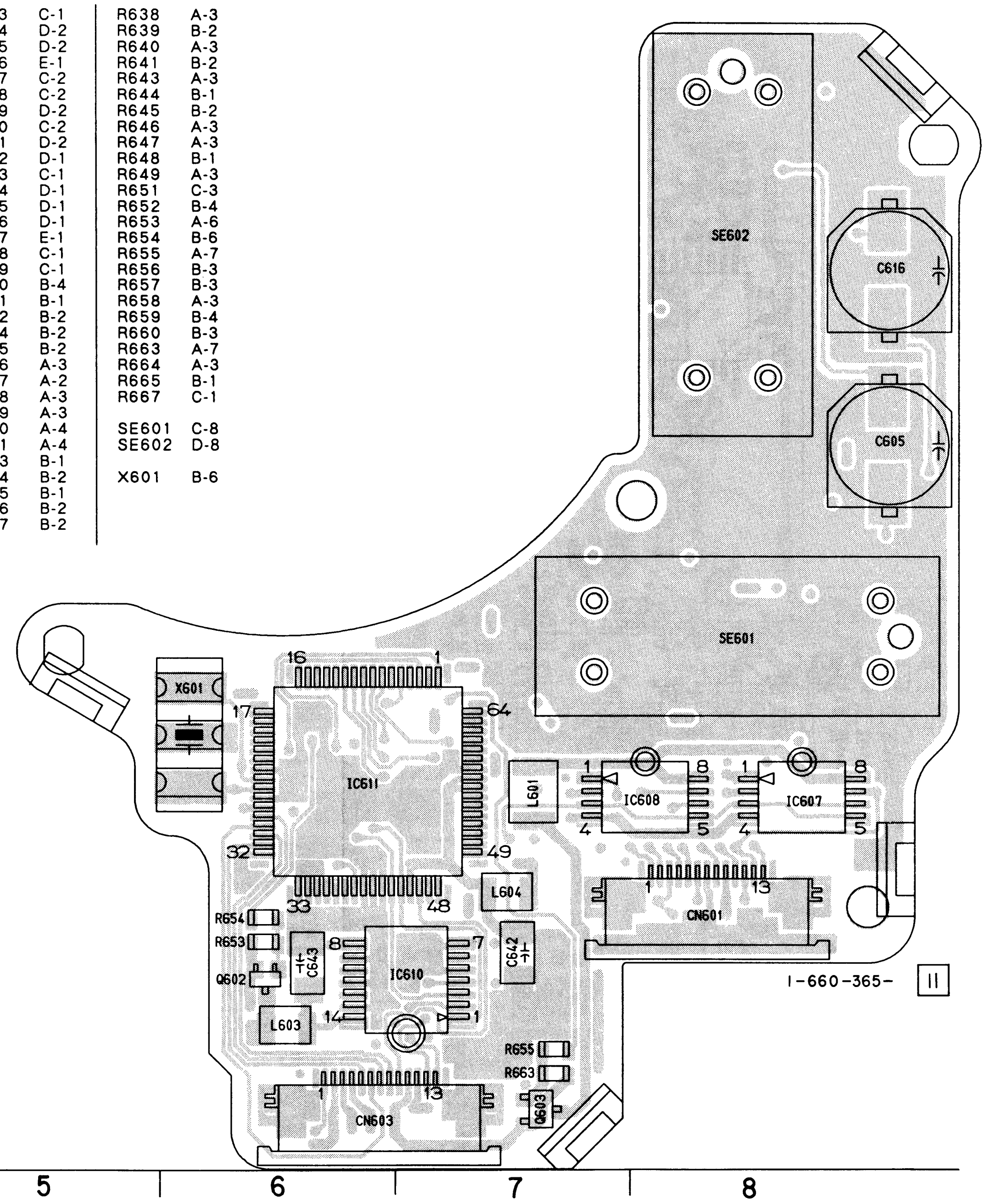
— Ref No. VP-45 BOARD: 9,000 series —

**VP-45** BOARD (CONDUCTOR SIDE)



E
D
C
B
A
R606
C610
C615
IC603
R617
C604
R614
R616
C612
C614
C609
R609
R605
C607
R615
R604
C601
C602
R601
C613
R612
R618
R611
C611
IC604
R613
R667
R668
R619
IC602
R603
R607
C608
R602
R610
R666
C606
R608
C636
C603
R665
R622
C634
C620
R639
R644
R635
R633
R624
R645
R625
R636
C628
C635
C627
R648
C619
R634
R637
R641
R621
C617
C618
C640
IC601
L602
C641
R651
R652
R620
IC609
Q605
Q604
Q601
R659
C645
C646
R656
R657
R660
IC605
C639
C644
C638
R632
C630
R640
R631
C625
C632
R626
C623
R646
C624
IC606
R647
C633
R627
C626
R628
R629
R630
C621
C637
R649
C622
R642
R623
C631
R638
R643
R658
R664
C629
R650
09
1
2
3
4
5

**VP-45** BOARD (COMPONENT SIDE)

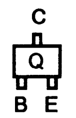


SE602
C616
C605
SE601
X601
IC611
16
1
17
64
32
49
33
48
L601
IC608
IC607
L604
CN601
R654
R653
Q602
C643
IC610
C642
L603
R655
R663
Q603
CN603
1-660-365-
11
6
7
8

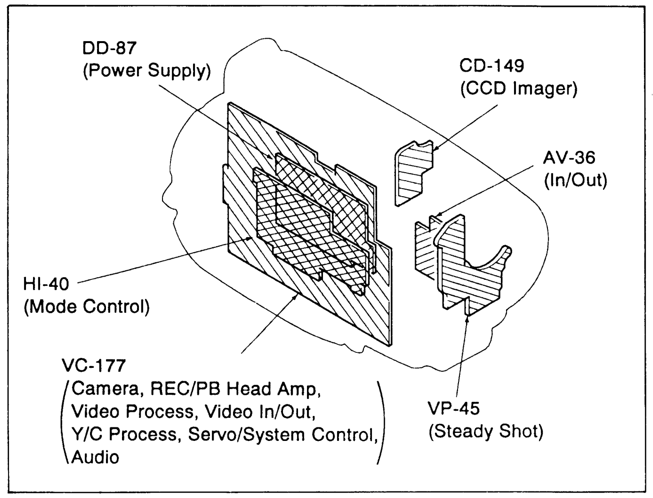
VP-45 BOARD

| | |
|---|---|
| C601 | D-1 |
| C602 | D-1 |
| C603 | B-1 |
| C604 | E-2 |
| C605 | D-8 |
| C606 | C-1 |
| C607 | D-2 |
| C609 | D-2 |
| C610 | E-1 |
| C612 | D-1 |
| C613 | D-1 |
| C614 | D-1 |
| C615 | E-1 |
| C616 | D-8 |
| C617 | B-1 |
| C618 | B-2 |
| C619 | B-1 |
| C620 | B-2 |
| C621 | A-3 |
| C622 | A-3 |
| C623 | A-2 |
| C624 | A-3 |
| C625 | A-4 |
| C627 | B-1 |
| C628 | B-2 |
| C629 | A-3 |
| C634 | B-2 |
| C636 | B-2 |
| C638 | A-3 |
| C639 | B-3 |
| C640 | B-2 |
| C641 | C-3 |
| C642 | A-7 |
| C643 | A-6 |
| C644 | B-3 |
| C645 | B-4 |
| C646 | B-4 |
| CN601 | B-8 |
| CN603 | A-6 |
| IC601 | C-3 |
| IC602 | C-2 |
| IC603 | E-1 |
| IC604 | C-1 |
| IC605 | B-3 |
| IC606 | A-3 |
| IC607 | B-8 |
| IC608 | B-8 |
| IC609 | B-3 |
| IC610 | A-7 |
| IC611 | B-6 |
| L601 | A-7 |
| L602 | C-3 |
| L603 | A-6 |
| L604 | A-7 |
| Q601 | B-4 |
| Q602 | A-6 |
| Q603 | A-7 |
| Q604 | B-3 |
| Q605 | B-3 |
| R601 | D-1 |
| R602 | C-1 |
| R603 | C-1 |
| R604 | D-2 |
| R605 | D-2 |
| R606 | E-1 |
| R607 | C-2 |
| R608 | C-2 |
| R609 | D-2 |
| R610 | C-2 |
| R611 | D-2 |
| R612 | D-1 |
| R613 | C-1 |
| R614 | D-1 |
| R615 | D-1 |
| R616 | D-1 |
| R617 | E-1 |
| R618 | C-1 |
| R619 | C-1 |
| R620 | B-4 |
| R621 | B-1 |
| R622 | B-2 |
| R624 | B-2 |
| R625 | B-2 |
| R626 | A-3 |
| R627 | A-2 |
| R628 | A-3 |
| R629 | A-3 |
| R630 | A-4 |
| R631 | A-4 |
| R633 | B-1 |
| R634 | B-2 |
| R635 | B-1 |
| R636 | B-2 |
| R637 | B-2 |
| R638 | A-3 |
| R639 | B-2 |
| R640 | A-3 |
| R641 | B-2 |
| R643 | A-3 |
| R644 | B-1 |
| R645 | B-2 |
| R646 | A-3 |
| R647 | A-3 |
| R648 | B-1 |
| R649 | A-3 |
| R651 | C-3 |
| R652 | B-4 |
| R653 | A-6 |
| R654 | B-6 |
| R655 | A-7 |
| R656 | B-3 |
| R657 | B-3 |
| R658 | A-3 |
| R659 | B-4 |
| R660 | B-3 |
| R663 | A-7 |
| R664 | A-3 |
| R665 | B-1 |
| R667 | C-1 |
| SE601 | C-8 |
| SE602 | D-8 |
| X601 | B-6 |

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



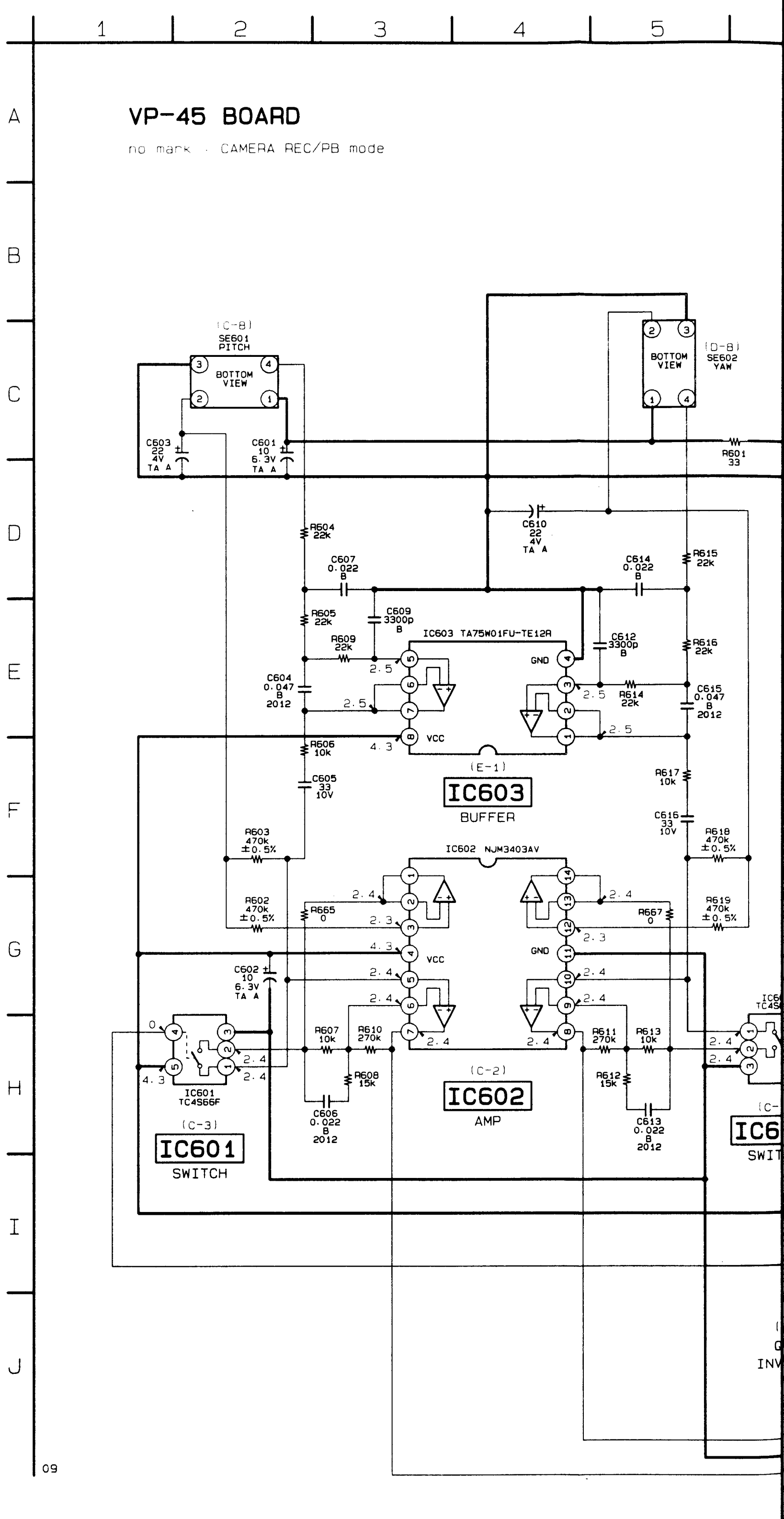
There are few cases that the part isn't mounted in this model is printed on this diagram.



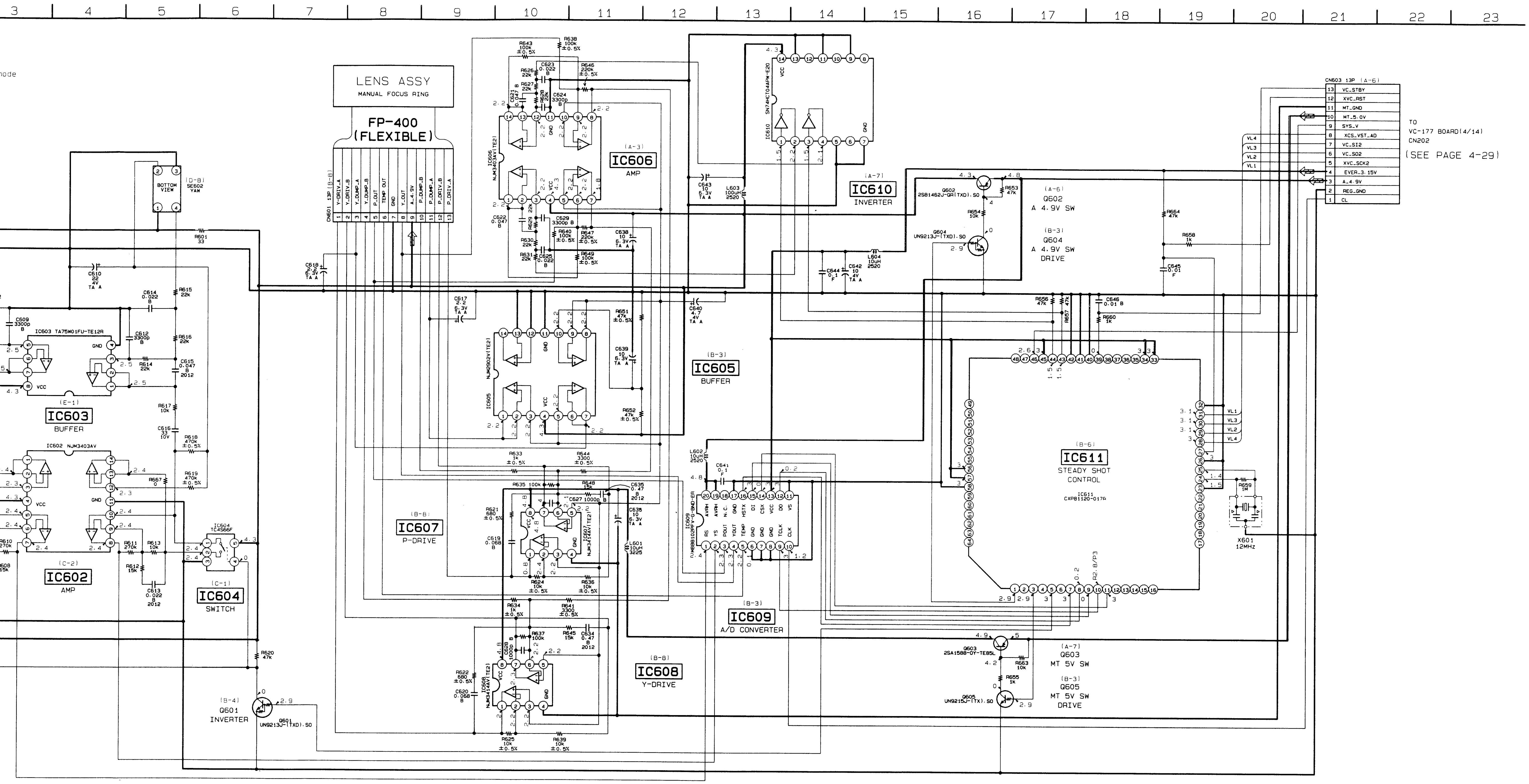
DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio
VP-45
(Steady Shot)

## VP-45 (STEADY SHOT) SCHEMATIC DIAGRAM

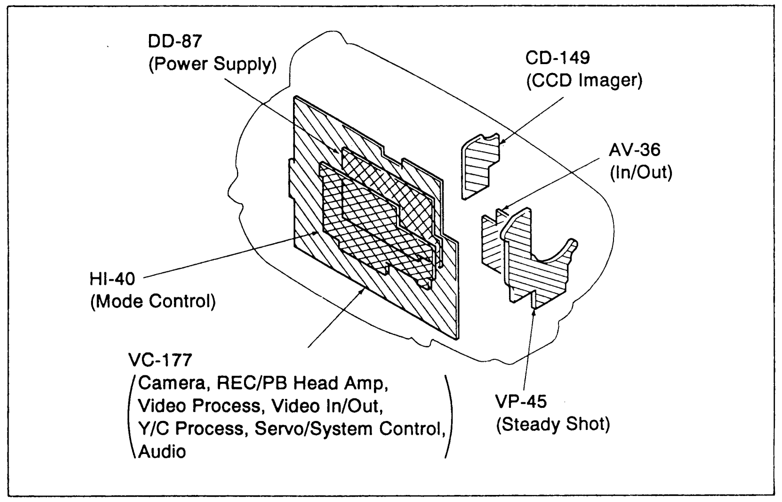
— Ref No. VP-45 BOARD: 9,000 series —



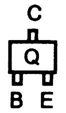
1
2
3
4
5
A
B
C
D
E
F
G
H
I
J
VP-45 BOARD
no mark : CAMERA REC/PB mode
(C-8)
SE601
PITCH
BOTTOM VIEW
(D-8)
SE602
YAW
C603 22 4V TA A
C601 10 6.3V TA A
R601 33
R604 22k
C610 22 4V TA A
C607 0.022 B
C614 0.022 B
R615 22k
R605 22k
C609 3300p B
R609 22k
IC603 TA75W01FU-TE12R
C612 3300p B
R616 22k
C604 0.047 B 2012
GND
R614 22k
C615 0.047 B 2012
R606 10k
VCC
(E-1)
IC603
BUFFER
C605 33 10V
R617 10k
C616 33 10V
R603 470k ±0.5%
IC602 NJM3403AV
R618 470k ±0.5%
R602 470k ±0.5%
R665 0
R667 0
R619 470k ±0.5%
C602 10 6.3V TA A
R607 10k
R610 270k
R611 270k
R613 10k
R608 15k
R612 15k
IC601 TC4S66F
(C-3)
IC601
SWITCH
C606 0.022 B 2012
(C-2)
IC602
AMP
C613 0.022 B 2012
09


LENS ASSY
MANUAL FOCUS RING
FP-400
(FLEXIBLE)
CN601 13P (B-8)
Y-DRIV_A
Y-DRIV_B
Y-DUMP_A
Y-DUMP_B
P_OUT
TEMP OUT
GND
Y_OUT
A_4.9V
P_DUMP_B
P_DUMP_A
P_DRIV_B
P_DRIV_A
BOTTOM VIEW
SE602 YAW
(D-8)
IC603 TA75W01FU-TE12R
IC603
BUFFER
(E-1)
IC602 NJM3403AV
IC602
AMP
(C-2)
IC604 TC4S66F
IC604
SWITCH
(C-1)
Q601
INVERTER
(B-4)
UN9213J-(TXD).SO
IC606 NJM3403AV(TE2)
IC606
AMP
(A-3)
IC605 NJM2902V(TE2)
IC605
BUFFER
(B-3)
IC607 NJM3414AV(TE2)
IC607
P-DRIVE
(B-8)
IC608 NJM3414AV(TE2)
IC608
Y-DRIVE
(B-8)
IC610 SN74HC1O4APW-E20
IC610
INVERTER
(A-7)
IC609 MB88102PFV-G-BND-ER
IC609
A/D CONVERTER
(B-3)
RS YS POUT YOUT TEMP GND GND GND TCLK CLK
AVRH AVRL N.C. GND HSTX DI CSX VCC DO VS
IC611
STEADY SHOT CONTROL
(B-6)
IC611 CXP81120-017R
X601 12MHz
Q602 2SB1462J-QR(TXD).SO
Q602
A 4.9V SW
(A-6)
Q604 UN9213J-(TXD).SO
Q604
A 4.9V SW DRIVE
(B-3)
Q603 2SA1588-OY-TE85L
Q603
MT 5V SW
(A-7)
Q605 UN9215J-(TX).SO
Q605
MT 5V SW DRIVE
(B-3)
CN603 13P (A-6)
13 VC_STBY
12 XVC_RST
11 MT_GND
10 MT_5.0V
9 SYS_V
8 XCS_VST_AD
7 VC_SI2
6 VC_SO2
5 XVC_SCK2
4 EVER_3.15V
3 A_4.9V
2 REG_GND
1 CL
VL1
VL2
VL3
VL4
TO
VC-177 BOARD(4/14)
CN202
(SEE PAGE 4-29)
3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

— Ref No. VC-177 BOARD: 10,000 series —

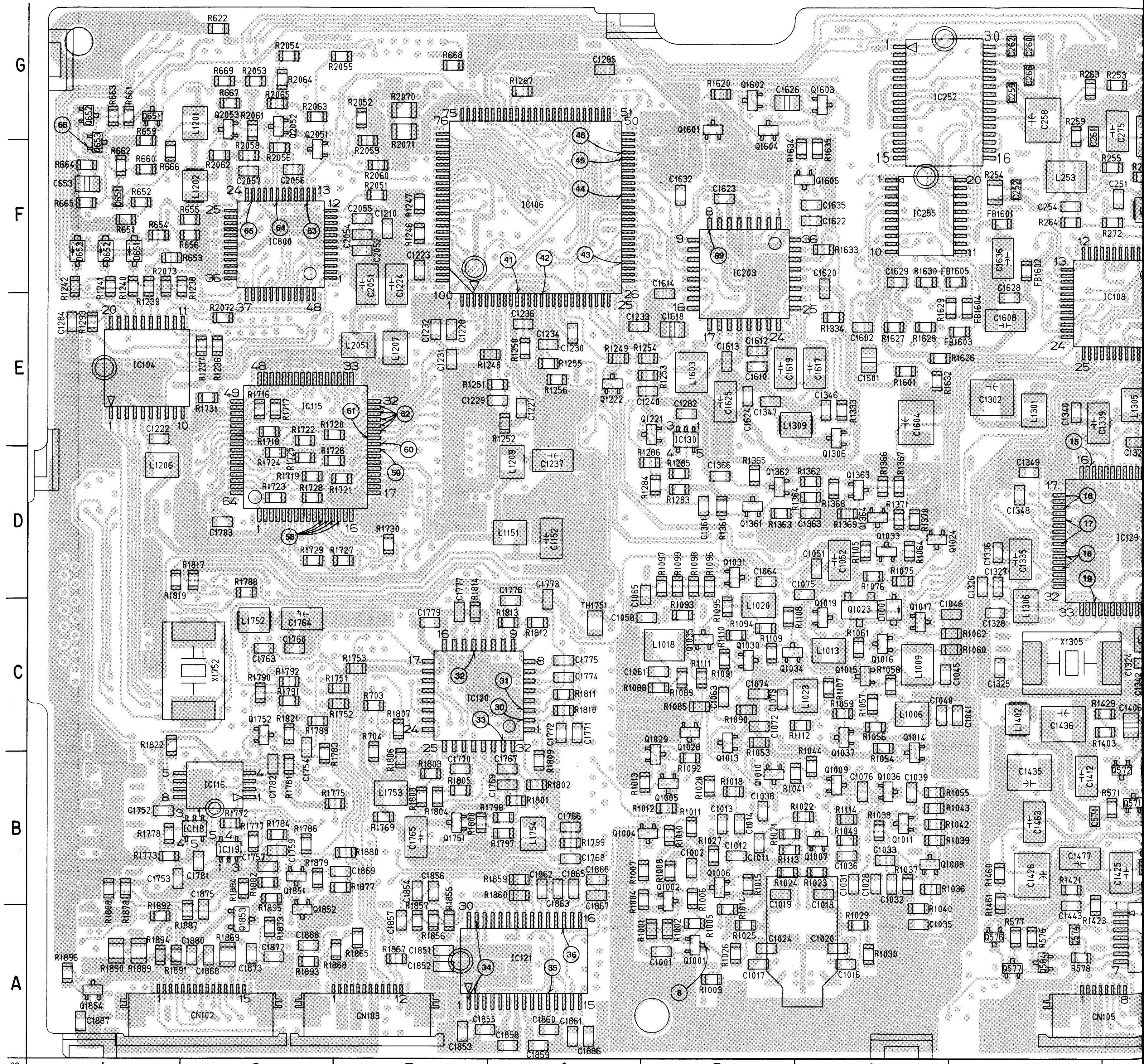

DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
(Camera, REC/PB Head Amp, Video Process, Video In/Out, Y/C Process, Servo/System Control, Audio)
VP-45
(Steady Shot)

- **For printed wiring boards.**
- This board is a six-layer print board. However, the patterns of layers 2, 3, 4 and 5 have not been included in the diagram.
- Chip transistor

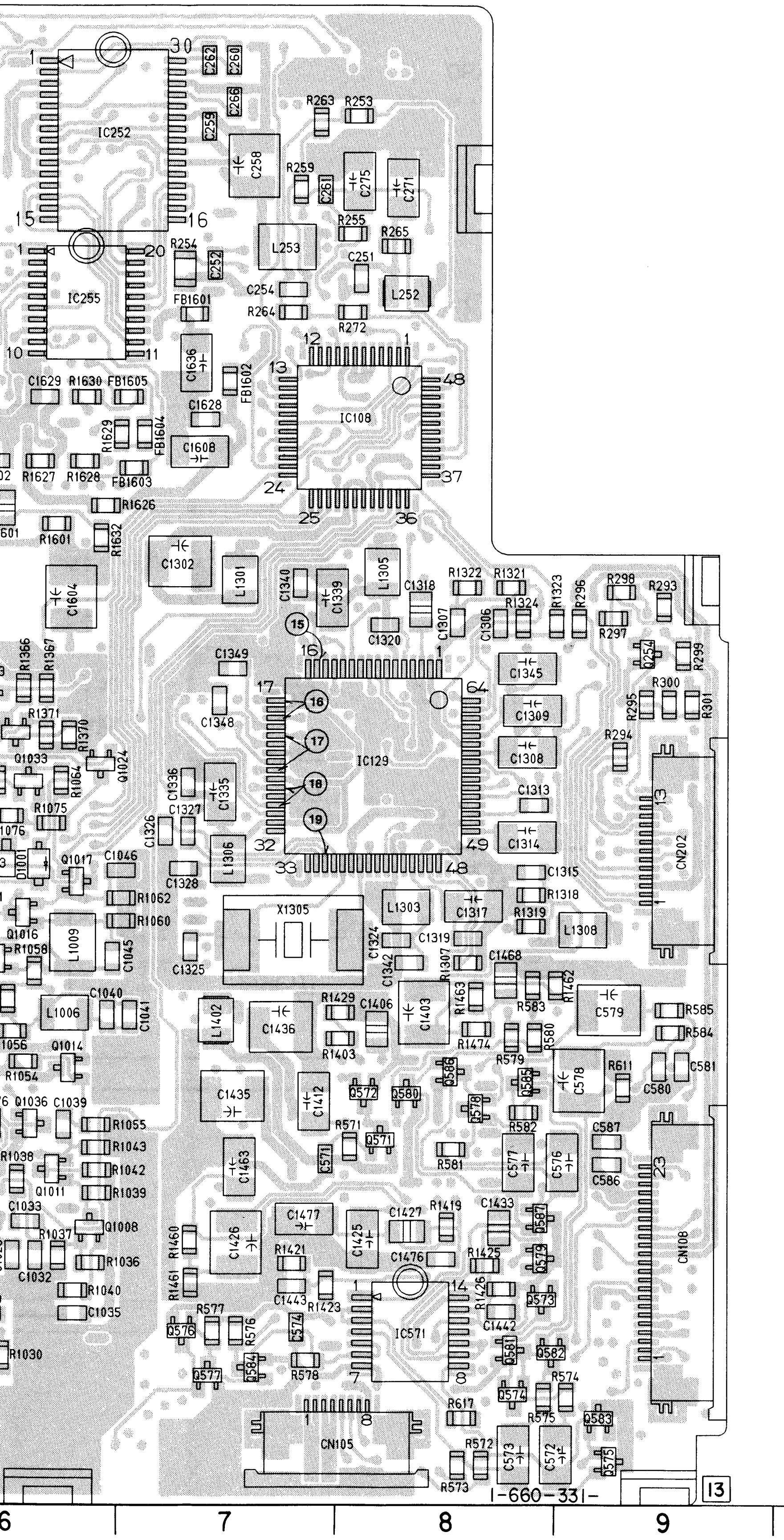


There are few cases that the part isn't mounted in this model is printed on this diagram.

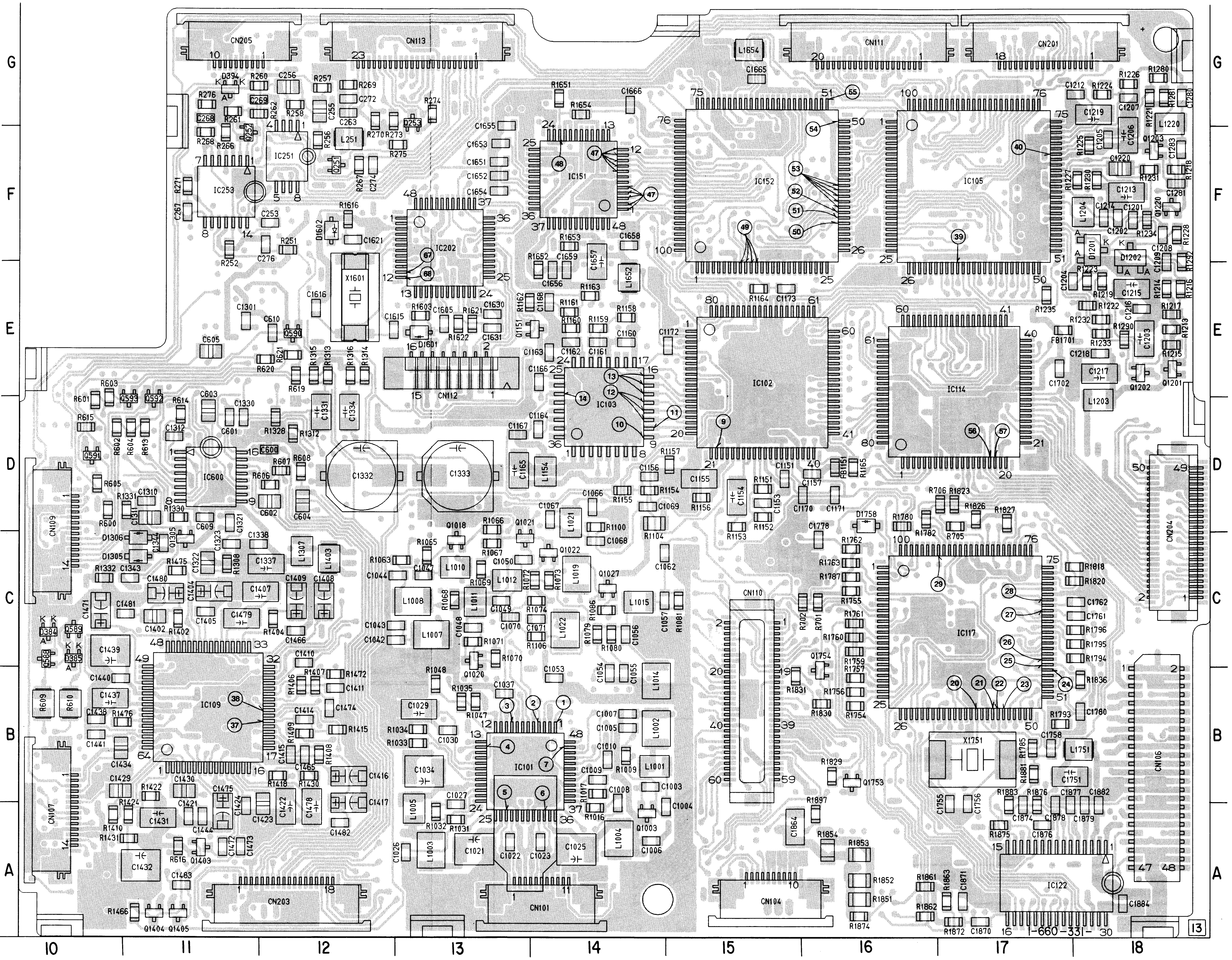
**VC-177** BOARD (COMPONENT SIDE)


G
F
E
D
C
B
A
1
2
3
4
5
6
7
09
IC106
IC800
IC104
IC115
IC203
IC252
IC255
IC108
IC120
IC116
IC118
IC119
IC121
IC129
IC130
CN102
CN103
CN105
X1752
X1305
TH1751
L1201
L1202
L1206
L1207
L2051
L1209
L1151
L1752
L1753
L1754
L1603
L1309
L1018
L1020
L1013
L1023
L1009
L1006
L1402
L1301
L1306
L253

## TROL, AUDIO) PRINTED WIRING BOARD


IC252
IC255
IC108
IC129
IC571
X1305
CN202
CN108
CN105
1-660-331-
13
6
7
8
9

## VC-177 BOARD (CONDUCTOR SIDE)


CN205
CN113
CN111
CN201
IC253
IC251
IC202
IC151
IC152
IC105
IC102
IC114
IC103
IC600
IC109
IC101
IC117
IC122
X1601
X1751
CN112
CN109
CN107
CN110
CN204
CN106
CN203
CN101
CN104
1-660-331- 30
13
G
F
E
D
C
B
A
10
11
12
13
14
15
16
17
18

VC-177 BOARD

| | |
|---|---|
| C251 | F-8 |
| C252 | F-7 |
| C253 | F-12 |
| C254 | F-7 |
| C255 | G-12 |
| C256 | G-12 |
| C258 | G-7 |
| C259 | G-7 |
| C260 | G-7 |
| C261 | G-7 |
| C262 | G-7 |
| C263 | G-12 |
| C266 | G-7 |
| C267 | F-11 |
| C268 | G-11 |
| C269 | G-12 |
| C271 | G-8 |
| C276 | F-12 |
| C572 | A-8 |
| C573 | A-8 |
| C574 | A-7 |
| C576 | B-8 |
| C577 | B-8 |
| C578 | B-9 |
| C579 | C-9 |
| C580 | B-9 |
| C581 | B-9 |
| C586 | B-9 |
| C587 | B-9 |
| C600 | D-12 |
| C601 | D-11 |
| C602 | D-12 |
| C603 | D-11 |
| C604 | D-12 |
| C605 | E-11 |
| C609 | D-11 |
| C610 | E-12 |
| C1002 | B-5 |
| C1003 | B-14 |
| C1004 | A-15 |
| C1005 | B-14 |
| C1006 | A-14 |
| C1007 | B-14 |
| C1008 | A-14 |
| C1009 | B-14 |
| C1010 | B-14 |
| C1011 | B-5 |
| C1012 | B-5 |
| C1013 | B-5 |
| C1014 | B-5 |
| C1018 | B-6 |
| C1019 | B-5 |
| C1020 | A-6 |
| C1021 | A-13 |
| C1022 | A-13 |
| C1023 | A-14 |
| C1024 | A-5 |
| C1025 | A-14 |
| C1026 | A-13 |
| C1027 | A-13 |
| C1029 | B-13 |
| C1030 | B-13 |
| C1034 | B-13 |
| C1035 | A-6 |
| C1036 | B-6 |
| C1038 | B-5 |
| C1039 | B-6 |
| C1040 | C-6 |
| C1042 | C-13 |
| C1044 | C-13 |
| C1045 | C-6 |
| C1046 | C-7 |
| C1047 | C-13 |
| C1048 | C-13 |
| C1049 | C-13 |
| C1050 | C-13 |
| C1051 | D-6 |
| C1052 | D-6 |
| C1053 | B-14 |
| C1054 | B-14 |
| C1055 | B-14 |
| C1056 | C-14 |
| C1057 | C-14 |
| C1058 | C-5 |
| C1061 | C-5 |
| C1062 | C-15 |
| C1063 | C-5 |
| C1064 | D-5 |
| C1066 | D-14 |
| C1067 | D-14 |
| C1068 | C-14 |
| C1069 | D-14 |
| C1070 | C-13 |
| C1071 | C-14 |
| C1072 | C-5 |
| C1075 | D-6 |
| C1076 | B-6 |
| C1151 | D-15 |
| C1152 | D-4 |
| C1153 | D-15 |
| C1154 | D-15 |
| C1156 | D-14 |
| C1157 | D-16 |
| C1160 | E-14 |
| C1161 | E-14 |
| C1162 | E-14 |
| C1163 | E-14 |
| C1164 | D-14 |
| C1165 | D-13 |
| C1166 | E-14 |
| C1167 | D-13 |
| C1168 | E-14 |
| C1201 | F-18 |
| C1203 | E-18 |
| C1204 | E-17 |
| C1205 | F-18 |
| C1206 | F-18 |
| C1207 | G-18 |
| C1208 | F-18 |
| C1209 | E-18 |
| C1210 | F-3 |
| C1212 | G-18 |
| C1213 | F-18 |
| C1215 | E-18 |
| C1216 | E-18 |
| C1217 | E-18 |
| C1218 | E-18 |
| C1219 | G-18 |
| C1220 | F-18 |
| C1222 | E-1 |
| C1223 | F-3 |
| C1224 | F-3 |
| C1227 | E-4 |
| C1228 | E-3 |
| C1229 | E-4 |
| C1230 | E-4 |
| C1231 | E-3 |
| C1232 | E-3 |
| C1233 | E-4 |
| C1234 | E-4 |
| C1236 | E-4 |
| C1237 | D-4 |
| C1240 | E-5 |
| C1280 | G-18 |
| C1282 | E-5 |
| C1283 | F-18 |
| C1284 | E-1 |
| C1285 | G-4 |
| C1301 | E-11 |
| C1302 | E-7 |
| C1306 | E-8 |
| C1307 | E-8 |
| C1308 | D-8 |
| C1309 | D-8 |
| C1310 | D-11 |
| C1311 | D-11 |
| C1312 | D-11 |
| C1313 | D-8 |
| C1314 | D-8 |
| C1315 | C-8 |
| C1317 | C-8 |
| C1318 | E-8 |
| C1319 | C-8 |
| C1320 | E-8 |
| C1321 | D-11 |
| C1322 | C-11 |
| C1323 | C-11 |
| C1324 | C-8 |
| C1326 | D-7 |
| C1327 | D-7 |
| C1328 | C-7 |
| C1330 | D-11 |
| C1331 | D-12 |
| C1332 | D-12 |
| C1333 | D-13 |
| C1334 | D-12 |
| C1335 | D-7 |
| C1336 | D-7 |
| C1337 | C-12 |
| C1338 | C-11 |
| C1339 | E-7 |
| C1340 | E-7 |
| C1342 | C-8 |
| C1343 | C-11 |
| C1345 | D-8 |
| C1346 | E-6 |
| C1347 | E-5 |
| C1402 | C-11 |
| C1403 | C-8 |
| C1404 | C-11 |
| C1405 | C-11 |
| C1406 | C-8 |
| C1407 | C-12 |
| C1408 | C-12 |
| C1409 | C-12 |
| C1410 | C-12 |
| C1411 | B-12 |
| C1412 | B-7 |
| C1414 | B-12 |
| C1415 | B-12 |
| C1416 | B-12 |
| C1417 | A-12 |
| C1421 | A-11 |
| C1422 | A-12 |
| C1423 | A-12 |
| C1424 | A-11 |
| C1425 | B-8 |
| C1426 | B-7 |
| C1427 | B-8 |
| C1429 | B-10 |
| C1430 | B-11 |
| C1431 | A-11 |
| C1432 | A-11 |
| C1433 | B-8 |
| C1434 | B-10 |
| C1435 | B-7 |
| C1436 | C-7 |
| C1437 | B-10 |
| C1439 | C-10 |
| C1441 | B-10 |
| C1444 | A-11 |
| C1471 | C-10 |
| C1474 | B-12 |
| C1475 | A-11 |
| C1601 | E-6 |
| C1602 | E-6 |
| C1604 | E-6 |
| C1605 | E-13 |
| C1608 | E-7 |
| C1612 | E-5 |
| C1613 | E-5 |
| C1615 | E-12 |
| C1616 | E-12 |
| C1617 | E-6 |
| C1618 | E-5 |
| C1619 | E-5 |
| C1620 | F-6 |
| C1621 | F-12 |
| C1622 | F-6 |
| C1623 | F-5 |
| C1624 | E-5 |
| C1625 | E-5 |
| C1626 | G-5 |
| C1628 | E-7 |
| C1629 | F-6 |
| C1630 | E-13 |
| C1631 | E-13 |
| C1632 | F-5 |
| C1635 | F-6 |
| C1654 | F-13 |
| C1655 | F-13 |
| C1656 | E-14 |
| C1657 | E-14 |
| C1658 | F-14 |
| C1659 | E-14 |
| C1665 | G-15 |
| C1702 | E-17 |
| C1703 | D-2 |
| C1751 | B-17 |
| C1752 | B-1 |
| C1753 | B-1 |
| C1754 | C-2 |
| C1755 | A-17 |
| C1756 | A-17 |
| C1757 | B-2 |
| C1758 | B-17 |
| C1760 | C-2 |
| C1761 | C-18 |
| C1762 | C-18 |
| C1763 | C-2 |
| C1764 | C-2 |
| C1765 | B-3 |
| C1767 | B-4 |
| C1768 | B-4 |
| C1769 | B-4 |
| C1770 | B-3 |
| C1771 | C-4 |
| C1772 | C-4 |
| C1773 | C-4 |
| C1774 | C-4 |
| C1775 | C-4 |
| C1776 | C-4 |
| C1777 | C-3 |
| C1779 | C-3 |
| C1780 | B-18 |
| C1781 | B-2 |
| C1782 | B-2 |
| C1851 | A-3 |
| C1852 | A-3 |
| C1853 | A-3 |
| C1854 | B-3 |
| C1855 | A-3 |
| C1856 | B-3 |
| C1857 | A-3 |
| C1858 | A-4 |
| C1859 | A-4 |
| C1860 | A-4 |
| C1861 | A-4 |
| C1862 | B-4 |
| C1863 | B-4 |
| C1864 | A-15 |
| C1865 | B-4 |
| C1866 | B-4 |
| C1867 | B-4 |
| C1868 | A-2 |
| C1869 | B-3 |
| C1870 | A-17 |
| C1871 | A-17 |
| C1872 | A-2 |
| C1873 | A-2 |
| C1874 | A-17 |
| C1875 | A-2 |
| C1876 | A-17 |
| C1877 | A-17 |
| C1878 | A-17 |
| C1879 | A-18 |
| C1880 | A-2 |
| C1882 | A-18 |
| C1884 | A-18 |
| C1886 | A-4 |
| C1887 | A-1 |
| C1888 | A-2 |
| C2051 | F-3 |
| C2052 | F-3 |
| C2054 | F-3 |
| C2055 | F-3 |
| C2056 | F-2 |
| C2057 | F-2 |
| CN101 | A-14 |
| CN102 | A-2 |
| CN103 | A-3 |
| CN104 | A-15 |
| CN105 | A-7 |
| CN106 | B-18 |
| CN107 | A-10 |
| CN108 | B-9 |
| CN109 | D-10 |
| CN110 | C-15 |
| CN111 | G-16 |
| CN112 | E-13 |
| CN113 | G-13 |
| CN202 | C-9 |
| CN203 | A-12 |
| CN204 | C-18 |
| CN205 | G-11 |
| D384 | C-10 |
| D385 | C-10 |
| D394 | G-11 |
| D651 | F-1 |
| D652 | F-1 |
| D653 | F-1 |
| D1201 | F-18 |
| D1202 | F-18 |
| D1601 | E-13 |
| D1602 | F-12 |
| D1758 | D-16 |
| FB1151 | D-16 |
| FB1601 | F-7 |
| FB1602 | F-7 |
| FB1603 | E-7 |
| FB1604 | E-7 |
| FB1605 | F-7 |
| FB1701 | E-17 |
| IC101 | B-13 |
| IC102 | E-15 |
| IC103 | D-14 |
| IC104 | E-1 |
| IC105 | F-17 |
| IC106 | F-4 |
| IC108 | E-8 |
| IC109 | B-11 |
| IC114 | E-17 |
| IC115 | E-2 |
| IC116 | B-2 |
| IC117 | C-17 |
| IC118 | B-2 |
| IC119 | B-2 |
| IC120 | C-3 |
| IC121 | A-4 |
| IC122 | A-17 |
| IC129 | D-8 |
| IC130 | E-5 |
| IC151 | F-14 |
| IC152 | F-15 |
| IC202 | F-13 |
| IC203 | F-5 |
| IC251 | F-12 |
| IC252 | G-6 |
| IC253 | F-11 |
| IC255 | F-6 |
| IC571 | A-8 |
| IC600 | D-11 |
| IC800 | F-2 |
| L251 | F-12 |
| L252 | F-8 |
| L253 | F-7 |
| L1001 | B-14 |
| L1002 | B-14 |
| L1003 | A-13 |
| L1004 | A-14 |
| L1005 | A-13 |
| L1006 | C-6 |
| L1007 | C-13 |
| L1008 | C-13 |
| L1009 | C-6 |
| L1010 | C-13 |
| L1011 | C-13 |
| L1012 | C-13 |
| L1013 | C-6 |
| L1014 | B-14 |
| L1015 | C-14 |
| L1018 | C-5 |
| L1019 | C-14 |
| L1021 | D-14 |
| L1022 | C-14 |
| L1151 | D-4 |
| L1154 | D-14 |
| L1201 | G-2 |
| L1202 | F-2 |
| L1203 | D-18 |
| L1204 | F-18 |
| L1206 | D-1 |
| L1207 | E-3 |
| L1209 | D-4 |
| L1220 | G-18 |
| L1301 | E-7 |
| L1303 | C-8 |
| L1305 | E-8 |
| L1306 | C-7 |
| L1307 | C-12 |
| L1308 | C-9 |
| L1309 | E-5 |
| L1402 | C-7 |
| L1403 | C-12 |
| L1603 | E-5 |
| L1652 | E-14 |
| L1654 | G-15 |
| L1751 | B-18 |
| L1752 | C-2 |
| L1753 | B-3 |
| L1754 | B-4 |
| L2051 | E-3 |
| Q251 | F-12 |
| Q252 | F-11 |
| Q253 | G-13 |
| Q254 | D-9 |
| Q572 | B-8 |
| Q573 | A-8 |
| Q574 | A-8 |
| Q575 | A-9 |
| Q576 | A-7 |
| Q577 | A-7 |
| Q578 | B-8 |
| Q579 | B-8 |
| Q580 | B-8 |
| Q581 | A-8 |
| Q582 | A-8 |
| Q583 | A-9 |
| Q584 | A-7 |
| Q585 | B-8 |
| Q586 | B-8 |
| Q587 | B-8 |
| Q588 | C-10 |
| Q589 | C-10 |
| Q590 | E-12 |
| Q591 | D-10 |
| Q592 | D-11 |
| Q593 | D-11 |
| Q1001 | A-5 |
| Q1002 | B-5 |
| Q1003 | A-14 |
| Q1004 | B-5 |
| Q1005 | B-5 |
| Q1006 | B-5 |
| Q1007 | B-6 |
| Q1009 | B-6 |
| Q1010 | B-5 |
| Q1013 | C-5 |
| Q1014 | C-6 |
| Q1015 | C-6 |
| Q1016 | C-6 |
| Q1018 | C-13 |
| Q1019 | C-6 |
| Q1021 | C-13 |
| Q1022 | C-14 |
| Q1023 | C-6 |
| Q1024 | D-6 |
| Q1027 | C-14 |
| Q1030 | C-5 |
| Q1031 | D-5 |
| Q1033 | D-6 |
| Q1034 | C-5 |
| Q1035 | C-5 |
| Q1036 | B-6 |
| Q1037 | C-6 |
| Q1151 | E-14 |
| Q1201 | E-18 |
| Q1202 | E-18 |
| Q1203 | F-18 |
| Q1220 | F-18 |
| Q1221 | E-5 |
| Q1222 | E-4 |
| Q1305 | C-11 |
| Q1306 | E-6 |
| Q1601 | G-5 |
| Q1602 | G-5 |
| Q1603 | G-6 |
| Q1604 | G-5 |
| Q1751 | B-3 |
| Q1752 | C-2 |
| Q1851 | B-2 |
| Q1852 | A-2 |
| Q1853 | A-2 |
| Q1854 | A-1 |
| Q2051 | F-2 |
| Q2052 | G-2 |
| Q2053 | G-2 |
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| R252 | F-11 |
| R253 | G-8 |
| R254 | F-7 |
| R255 | F-8 |
| R256 | F-12 |
| R257 | G-12 |
| R258 | G-12 |
| R259 | G-7 |
| R260 | G-12 |
| R261 | G-11 |
| R262 | G-12 |
| R263 | G-7 |
| R264 | F-7 |
| R265 | F-8 |
| R266 | F-11 |
| R267 | F-12 |
| R268 | F-11 |
| R269 | G-12 |
| R270 | G-12 |
| R271 | F-11 |
| R272 | F-8 |
| R273 | G-12 |
| R274 | G-13 |
| R275 | F-13 |
| R276 | G-11 |
| R293 | E-9 |
| R294 | D-9 |
| R295 | D-9 |
| R296 | E-9 |
| R297 | E-9 |
| R299 | D-9 |
| R301 | D-9 |
| R572 | A-8 |
| R573 | A-8 |
| R574 | A-9 |
| R575 | A-8 |
| R576 | A-7 |
| R577 | A-7 |
| R578 | A-7 |
| R579 | C-8 |
| R580 | C-8 |
| R581 | B-8 |
| R582 | B-8 |
| R583 | C-8 |
| R584 | C-9 |
| R585 | C-9 |
| R600 | D-10 |
| R601 | D-10 |
| R602 | D-10 |
| R603 | D-10 |
| R604 | D-11 |
| R605 | D-10 |
| R606 | D-12 |
| R607 | D-12 |
| R608 | D-12 |
| R609 | B-10 |
| R610 | B-10 |
| R611 | B-9 |
| R613 | D-11 |
| R614 | D-11 |
| R615 | D-10 |
| R616 | A-11 |
| R617 | A-8 |
| R619 | E-12 |
| R620 | E-12 |
| R621 | E-12 |
| R622 | G-2 |
| R651 | F-1 |
| R653 | F-1 |
| R654 | F-1 |
| R655 | F-2 |
| R656 | F-2 |
| R668 | G-3 |
| R669 | G-2 |
| R702 | C-16 |
| R703 | C-3 |
| R705 | D-17 |
| R706 | D-16 |
| R1001 | A-5 |
| R1002 | A-5 |
| R1003 | A-5 |
| R1004 | B-5 |
| R1005 | A-5 |
| R1006 | B-5 |
| R1007 | B-5 |
| R1008 | B-5 |
| R1009 | B-14 |
| R1010 | B-5 |
| R1011 | B-5 |
| R1012 | B-5 |
| R1013 | B-5 |
| R1014 | A-5 |
| R1016 | A-14 |
| R1017 | B-14 |
| R1018 | B-5 |
| R1020 | B-5 |
| R1021 | B-5 |
| R1022 | B-6 |
| R1023 | B-6 |
| R1024 | B-5 |
| R1025 | A-5 |
| R1026 | A-5 |
| R1027 | B-5 |
| R1029 | A-6 |
| R1030 | A-6 |
| R1031 | A-13 |
| R1032 | A-13 |
| R1033 | B-13 |
| R1034 | B-13 |
| R1035 | B-13 |
| R1038 | B-6 |
| R1041 | B-5 |
| R1044 | B-6 |
| R1049 | B-6 |
| R1053 | C-5 |
| R1054 | C-6 |
| R1055 | B-6 |
| R1056 | C-6 |
| R1057 | C-6 |
| R1058 | C-6 |
| R1060 | C-7 |
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| R1062 | C-7 |
| R1063 | C-13 |
| R1065 | C-13 |
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| R1069 | C-13 |
| R1070 | C-13 |
| R1072 | C-14 |
| R1073 | C-14 |
| R1074 | C-14 |
| R1075 | D-6 |
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| R1081 | C-15 |
| R1085 | C-5 |
| R1086 | C-14 |
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| R1090 | C-5 |
| R1091 | C-5 |
| R1093 | C-5 |
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| R1095 | C-5 |
| R1096 | D-5 |
| R1097 | D-5 |
| R1098 | D-5 |
| R1099 | D-5 |
| R1100 | D-14 |
| R1104 | D-14 |
| R1105 | D-6 |
| R1106 | C-14 |
| R1108 | C-5 |
| R1109 | C-5 |
| R1110 | C-5 |
| R1111 | C-5 |
| R1112 | C-6 |
| R1113 | B-5 |
| R1114 | B-6 |
| R1151 | D-15 |
| R1152 | D-15 |
| R1153 | D-15 |
| R1154 | D-14 |
| R1155 | D-14 |
| R1156 | D-15 |
| R1157 | D-15 |
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| R1160 | E-14 |
| R1162 | E-14 |
| R1163 | E-14 |
| R1165 | D-16 |
| R1213 | E-18 |
| R1215 | E-18 |
| R1216 | E-18 |
| R1217 | E-18 |
| R1218 | F-18 |
| R1219 | E-18 |
| R1221 | G-18 |
| R1222 | E-18 |
| R1223 | E-18 |
| R1224 | G-18 |
| R1225 | F-18 |
| R1226 | G-18 |
| R1227 | F-18 |
| R1228 | F-18 |
| R1230 | F-18 |
| R1231 | F-18 |
| R1232 | E-18 |
| R1233 | E-18 |
| R1234 | F-18 |
| R1235 | E-17 |
| R1236 | E-2 |
| R1237 | E-2 |
| R1238 | F-1 |
| R1239 | F-1 |
| R1240 | F-1 |
| R1241 | F-1 |
| R1242 | F-1 |
| R1246 | F-3 |
| R1247 | F-3 |
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| R1283 | D-5 |
| R1284 | D-5 |
| R1285 | D-5 |
| R1286 | D-5 |
| R1290 | E-18 |
| R1292 | E-18 |
| R1293 | E-1 |
| R1307 | C-8 |
| R1308 | C-11 |
| R1312 | D-12 |
| R1313 | E-12 |
| R1314 | E-12 |
| R1315 | E-12 |
| R1316 | E-12 |
| R1318 | C-8 |
| R1319 | C-8 |
| R1321 | E-8 |
| R1322 | E-8 |
| R1323 | E-8 |
| R1324 | E-8 |
| R1330 | D-11 |
| R1331 | D-11 |
| R1332 | C-10 |
| R1333 | E-6 |
| R1334 | E-6 |
| R1402 | C-11 |
| R1403 | C-7 |
| R1404 | C-12 |
| R1406 | B-12 |
| R1407 | B-12 |
| R1408 | B-12 |
| R1409 | B-12 |
| R1410 | A-10 |
| R1415 | B-12 |
| R1418 | B-12 |
| R1419 | B-8 |
| R1421 | B-7 |
| R1422 | B-11 |
| R1423 | B-7 |
| R1424 | A-11 |
| R1425 | B-8 |
| R1426 | A-8 |
| R1429 | C-7 |
| R1430 | B-12 |
| R1431 | A-11 |
| R1460 | B-7 |
| R1463 | C-8 |
| R1472 | B-12 |
| R1476 | B-11 |
| R1601 | E-6 |
| R1603 | E-13 |
| R1616 | F-12 |
| R1620 | G-5 |
| R1621 | E-13 |
| R1622 | E-13 |
| R1626 | E-6 |
| R1628 | E-6 |
| R1629 | E-6 |
| R1630 | F-6 |
| R1632 | E-6 |
| R1633 | F-6 |
| R1651 | G-14 |
| R1653 | F-14 |
| R1751 | C-3 |
| R1752 | C-3 |
| R1753 | C-3 |
| R1759 | C-16 |
| R1760 | C-16 |
| R1761 | C-16 |
| R1762 | C-16 |
| R1763 | C-16 |
| R1772 | B-2 |
| R1773 | B-1 |
| R1775 | B-2 |
| R1780 | D-16 |
| R1781 | B-2 |
| R1782 | D-16 |
| R1783 | C-2 |
| R1784 | B-2 |
| R1785 | B-17 |
| R1786 | B-2 |
| R1787 | C-16 |
| R1789 | C-2 |
| R1791 | C-2 |
| R1792 | C-2 |
| R1793 | B-17 |
| R1794 | C-18 |
| R1795 | C-18 |
| R1796 | C-18 |
| R1798 | B-4 |
| R1801 | B-4 |
| R1803 | B-3 |
| R1804 | B-3 |
| R1805 | B-3 |
| R1806 | B-3 |
| R1807 | C-3 |
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| R1810 | C-4 |
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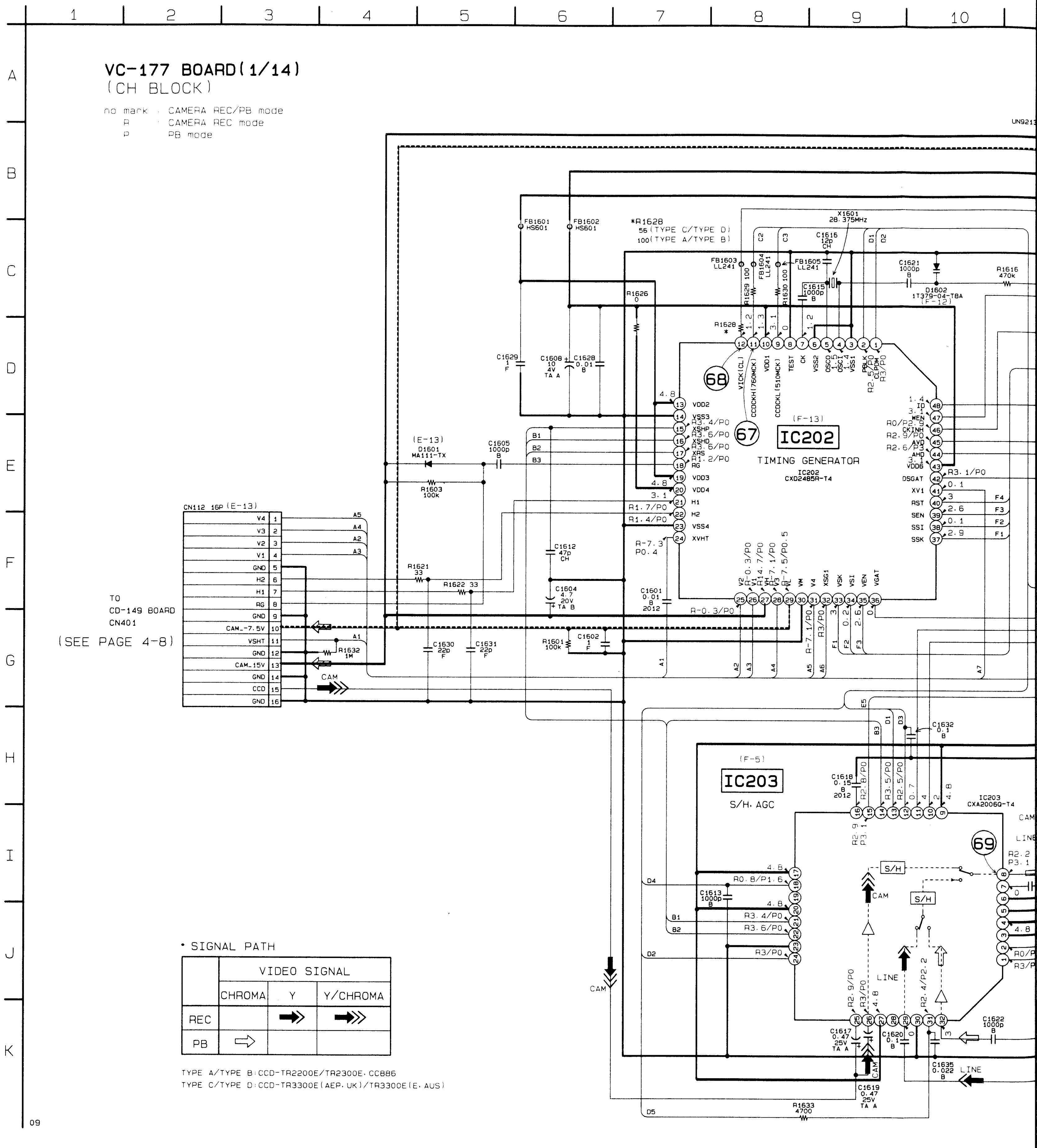
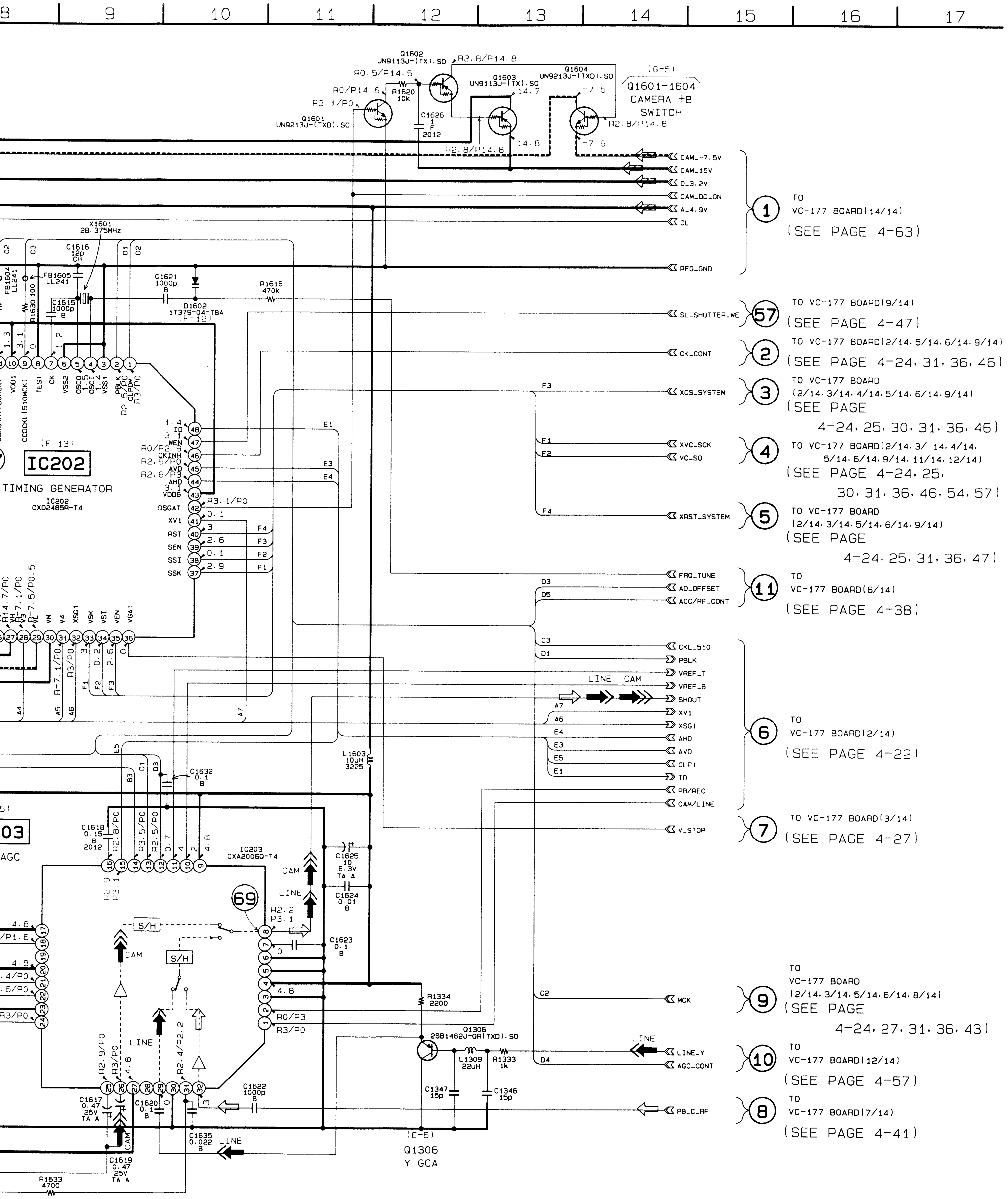
| R1813 | C-4 |
| R1814 | C-3 |
| R1817 | D-2 |
| R1818 | C-18 |
| R1820 | C-18 |
| R1821 | C-2 |
| R1822 | C-1 |
| R1823 | D-17 |
| R1826 | D-17 |
| R1827 | D-17 |
| R1836 | B-18 |
| R1851 | A-16 |
| R1852 | A-16 |
| R1853 | A-16 |
| R1855 | A-3 |
| R1856 | A-3 |
| R1857 | A-3 |
| R1859 | B-4 |
| R1860 | B-4 |
| R1861 | A-16 |
| R1862 | A-16 |
| R1863 | A-17 |
| R1865 | A-3 |
| R1867 | A-3 |
| R1868 | A-3 |
| R1869 | A-2 |
| R1872 | A-17 |
| R1873 | A-2 |
| R1874 | A-16 |
| R1875 | A-17 |
| R1876 | A-17 |
| R1877 | B-3 |
| R1878 | B-1 |
| R1880 | B-3 |
| R1881 | B-17 |
| R1882 | B-2 |
| R1883 | A-17 |
| R1884 | B-2 |
| R1887 | A-2 |
| R1888 | B-1 |
| R1889 | A-1 |
| R1890 | A-1 |
| R1891 | A-1 |
| R1892 | A-1 |
| R1893 | A-2 |
| R1894 | A-1 |
| R1895 | B-2 |
| R1896 | A-1 |
| R1897 | A-16 |
| R2051 | F-3 |
| R2052 | G-3 |
| R2053 | G-2 |
| R2054 | G-2 |
| R2055 | G-3 |
| R2056 | F-2 |
| R2058 | F-2 |
| R2059 | F-3 |
| R2060 | F-3 |
| R2061 | G-2 |
| R2062 | F-2 |
| R2063 | G-2 |
| R2064 | G-2 |
| R2065 | G-2 |
| R2070 | G-3 |
| R2071 | G-3 |
| R2072 | E-2 |
| R2073 | F-1 |
| TH1751 | C-4 |
| X1305 | C-7 |
| X1601 | E-12 |
| X1751 | B-17 |
| X1752 | C-2 |

## VC-177 (CAMERA (1)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —




8
9
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11
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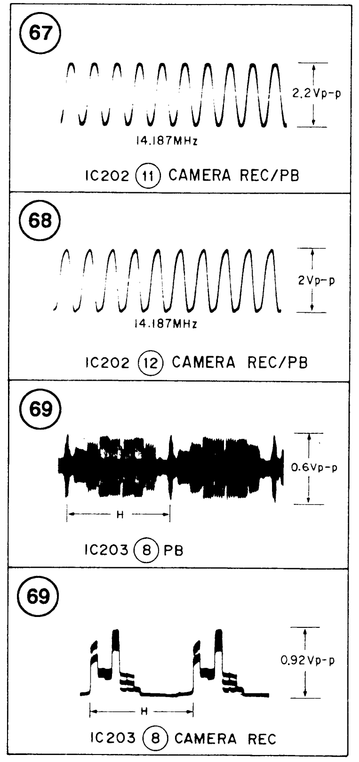
14
15
16
17
Q1602 UN9113J-(TX).SO
Q1603 UN9113J-(TX).SO
Q1604 UN9213J-(TXD).SO
Q1601 UN9213J-(TXD).SO
R1620 10k
C1626 1 F 2012
(G-5) Q1601-1604 CAMERA +B SWITCH
CAM_-7.5V
CAM_15V
D_3.2V
CAM_DD_ON
A_4.9V
CL
REG_GND
① TO VC-177 BOARD(14/14) (SEE PAGE 4-63)
X1601 28.375MHz
C1616 12p CH
FB1605 LL241
FB1604 LL241
C1615 1000p B
C1621 1000p B
D1602 1T379-04-TBA (F-12)
R1616 470k
SL_SHUTTER_WE
57 TO VC-177 BOARD(9/14) (SEE PAGE 4-47)
CK_CONT
② TO VC-177 BOARD(2/14, 5/14, 6/14, 9/14) (SEE PAGE 4-24, 31, 36, 46)
XCS_SYSTEM
③ TO VC-177 BOARD (2/14, 3/14, 4/14, 5/14, 6/14, 9/14) (SEE PAGE 4-24, 25, 30, 31, 36, 46)
XVC_SCK
VC_SO
④ TO VC-177 BOARD(2/14, 3/ 14, 4/14, 5/14, 6/14, 9/14, 11/14, 12/14) (SEE PAGE 4-24, 25, 30, 31, 36, 46, 54, 57)
XRST_SYSTEM
⑤ TO VC-177 BOARD (2/14, 3/14, 5/14, 6/14, 9/14) (SEE PAGE 4-24, 25, 31, 36, 47)
IC202 TIMING GENERATOR IC202 CXD2485R-T4 (F-13)
FRQ_TUNE
AD_OFFSET
ACC/RF_CONT
⑪ TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
CKL_510
PBLK
VREF_T
VREF_B
SHOUT
XV1
XSG1
AHD
AVD
CLP1
ID
PB/REC
CAM/LINE
LINE CAM
⑥ TO VC-177 BOARD(2/14) (SEE PAGE 4-22)
V_STOP
⑦ TO VC-177 BOARD(3/14) (SEE PAGE 4-27)
L1603 10uH 3225
C1632 0.1 B
IC203 AGC IC203 CXA2006Q-T4
C1618 0.15 B 2012
C1625 10 6.3V TA A
C1624 0.01 B
C1623 0.1 B
69
S/H
CAM
LINE
R1334 2200
MCK
⑨ TO VC-177 BOARD (2/14, 3/14, 5/14, 6/14, 8/14) (SEE PAGE 4-24, 27, 31, 36, 43)
Q1306 2SB1462J-QR(TXD).SO
L1309 22uH
R1333 1k
LINE_Y
AGC_CONT
⑩ TO VC-177 BOARD(12/14) (SEE PAGE 4-57)
C1347 15p
C1346 15p
C1622 1000p B
PB_C_RF
⑧ TO VC-177 BOARD(7/14) (SEE PAGE 4-41)
C1617 0.47 25V TA A
C1620 0.1 B
C1635 0.022 B
C1619 0.47 25V TA A
R1633 4700
(E-6) Q1306 Y GCA

**VC-177** BOARD(CH BLOCK)



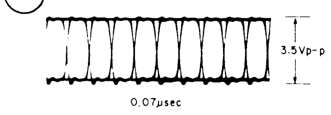
## VC-177 (CAMERA (2)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.

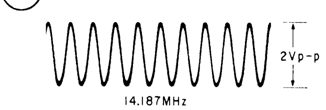
**VC-177** BOARD (CA BLOCK)

(47)



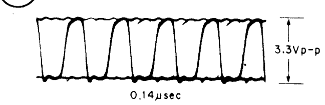
IC151 ①-⑤,⑧-⑫ CAMERA REC

(48)



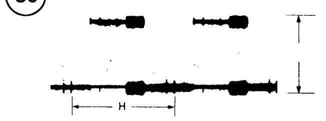
IC151 ㉒ CAMERA REC

(49)



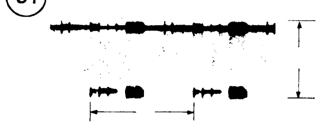
IC152 ⑨—⑫ CAMERA REC

(50)



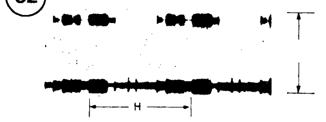
IC152 ㉛ CAMERA REC

(51)



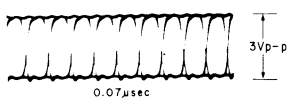
IC152 ㉜ CAMERA REC

(52)



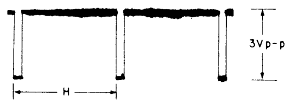
IC152 ㉝ CAMERA REC

(53)



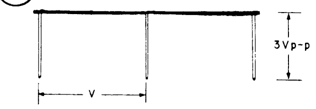
IC152 ㉞—㊳ CAMERA REC

(54)

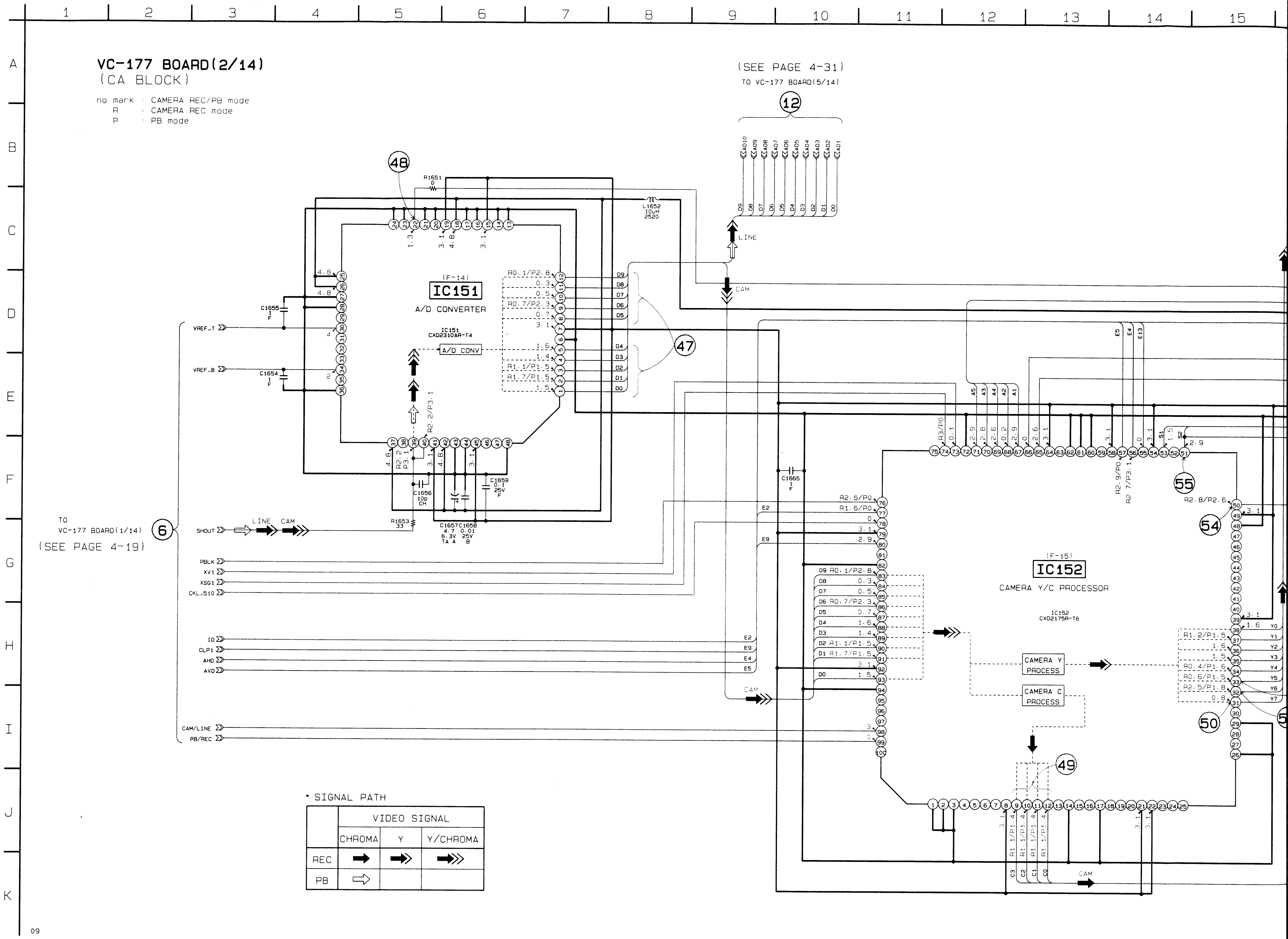


IC152 (50) CAMERA REC

(55)



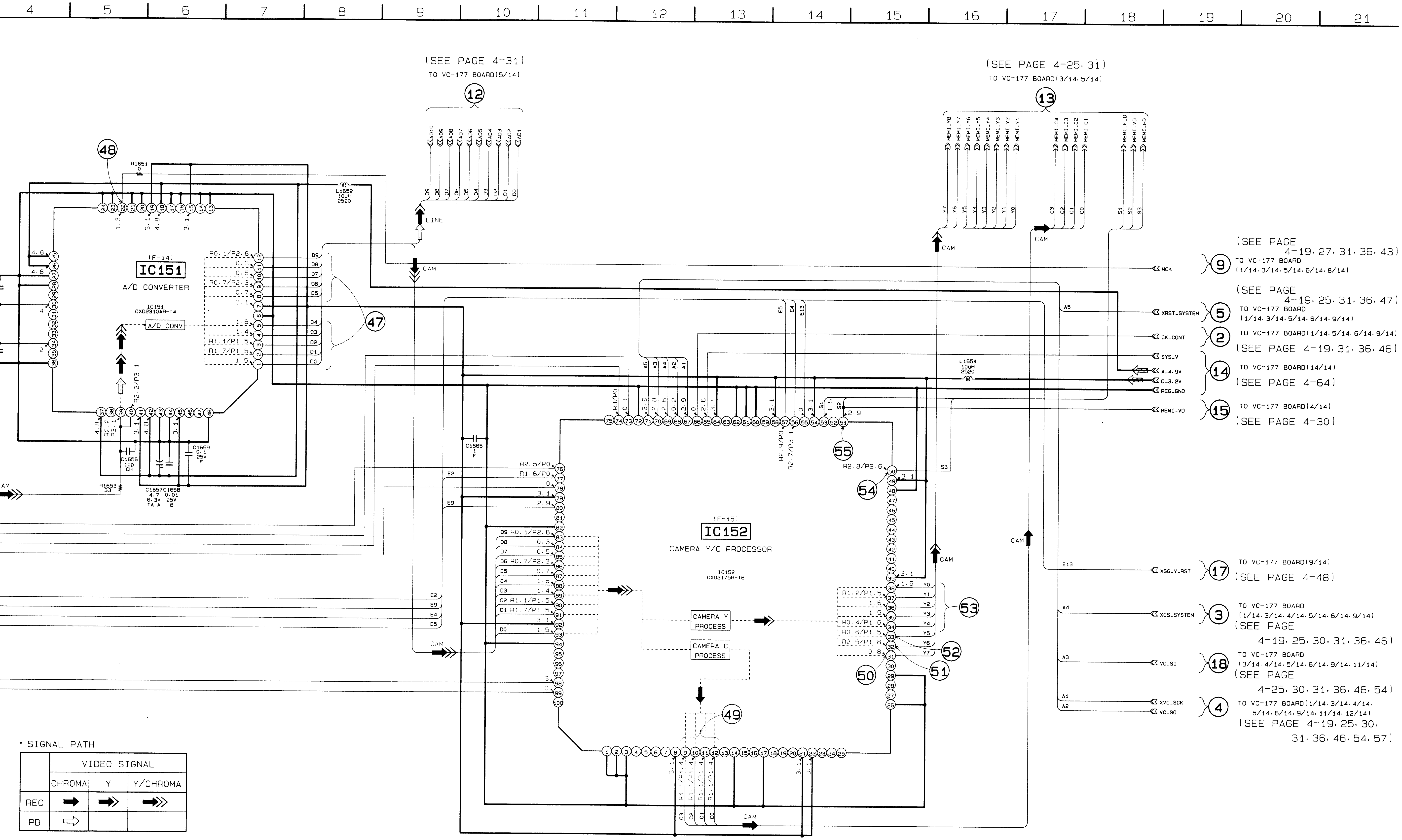
IC152 (51) CAMERA REC


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
A
B
C
D
E
F
G
H
I
J
K
VC-177 BOARD(2/14)
(CA BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
(SEE PAGE 4-31)
TO VC-177 BOARD(5/14)
12
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
D9
D8
D7
D6
D5
D4
D3
D2
D1
D0
LINE
CAM
48
47
R1651
0
L1652
10uH
2520
(F-14)
IC151
A/D CONVERTER
IC151
CXD2310AR-T4
A/D CONV
C1655
1
F
C1654
1
F
VREF_T
VREF_B
TO
VC-177 BOARD(1/14)
(SEE PAGE 4-19)
6
SHOUT
PBLK
XV1
XSG1
CKL_510
ID
CLP1
AHD
AVD
CAM/LINE
PB/REC
C1656
10p
CH
R1653
33
C1657
4.7
6.3V
TA A
C1658
0.01
25V
B
C1659
0.1
25V
F
C1665
1
F
E2
E9
E4
E5
E13
A5
A3
A4
A2
A1
S1
S2
(F-15)
IC152
CAMERA Y/C PROCESSOR
IC152
CXD2175R-T6
CAMERA Y PROCESS
CAMERA C PROCESS
Y0
Y1
Y2
Y3
Y4
Y5
Y6
Y7
C3
C2
C1
C0
55
54
50
49
09

• SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ➡» | ➡»» |
| PB | ⇨ | | |

- Refer to page 4–13 for Printed Wiring Board.


4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
(SEE PAGE 4-31)
TO VC-177 BOARD(5/14)
12
AD10 AD9 AD8 AD7 AD6 AD5 AD4 AD3 AD2 AD1
D9 D8 D7 D6 D5 D4 D3 D2 D1 D0
LINE
CAM
(SEE PAGE 4-25, 31)
TO VC-177 BOARD(3/14, 5/14)
13
MEMI_Y8 MEMI_Y7 MEMI_Y6 MEMI_Y5 MEMI_Y4 MEMI_Y3 MEMI_Y2 MEMI_Y1
MEMI_C4 MEMI_C3 MEMI_C2 MEMI_C1
MEMI_FLD MEMI_VD MEMI_HD
Y7 Y6 Y5 Y4 Y3 Y2 Y1 Y0
C3 C2 C1 C0
S1 S2 S3
48
R1651 0
L1652 10uH 2520
(F-14)
IC151
A/D CONVERTER
IC151 CXD2310AR-T4
A/D CONV
R0.1/P2.8
0.3
0.5
R0.7/P2.3
0.7
3.1
1.6
1.4
R1.1/P1.5
R1.7/P1.5
1.5
47
R2.2/P3.1
C1656 10p CH
C1657 4.7 6.3V TA A
C1658 0.01 25V B
C1659 0.1 25V F
R1653 33
C1665 1 F
MCK
(SEE PAGE 4-19, 27, 31, 36, 43)
9
TO VC-177 BOARD (1/14, 3/14, 5/14, 6/14, 8/14)
XRST_SYSTEM
(SEE PAGE 4-19, 25, 31, 36, 47)
5
TO VC-177 BOARD (1/14, 3/14, 5/14, 6/14, 9/14)
CK_CONT
2
TO VC-177 BOARD(1/14, 5/14, 6/14, 9/14)
(SEE PAGE 4-19, 31, 36, 46)
SYS_V
A_4.9V
D_3.2V
REG_GND
14
TO VC-177 BOARD(14/14)
(SEE PAGE 4-64)
MEMI_VD
15
TO VC-177 BOARD(4/14)
(SEE PAGE 4-30)
L1654 10uH 2520
A5 A4 A3 A2 A1
E5 E4 E13
E2 E9
R3/P0
R2.9/P0
R2.7/P3.1
55
R2.8/P2.6
54
(F-15)
IC152
CAMERA Y/C PROCESSOR
IC152 CXD2175R-T6
R2.5/P0
R1.6/P0
D9 R0.1/P2.8
D6 R0.7/P2.3
D2 R1.1/P1.5
D1 R1.7/P1.5
CAMERA Y PROCESS
CAMERA C PROCESS
49
R1.2/P1.5
R0.4/P1.6
R0.6/P1.5
R2.5/P1.8
53
52
51
50
R1.1/P1.4
XSG_V_RST
17
TO VC-177 BOARD(9/14)
(SEE PAGE 4-48)
XCS_SYSTEM
3
TO VC-177 BOARD (1/14, 3/14, 4/14, 5/14, 6/14, 9/14)
(SEE PAGE 4-19, 25, 30, 31, 36, 46)
VC_SI
18
TO VC-177 BOARD (3/14, 4/14, 5/14, 6/14, 9/14, 11/14)
(SEE PAGE 4-25, 30, 31, 36, 46, 54)
XVC_SCK
VC_SO
4
TO VC-177 BOARD(1/14, 3/14, 4/14, 5/14, 6/14, 9/14, 11/14, 12/14)
(SEE PAGE 4-19, 25, 30, 31, 36, 46, 54, 57)

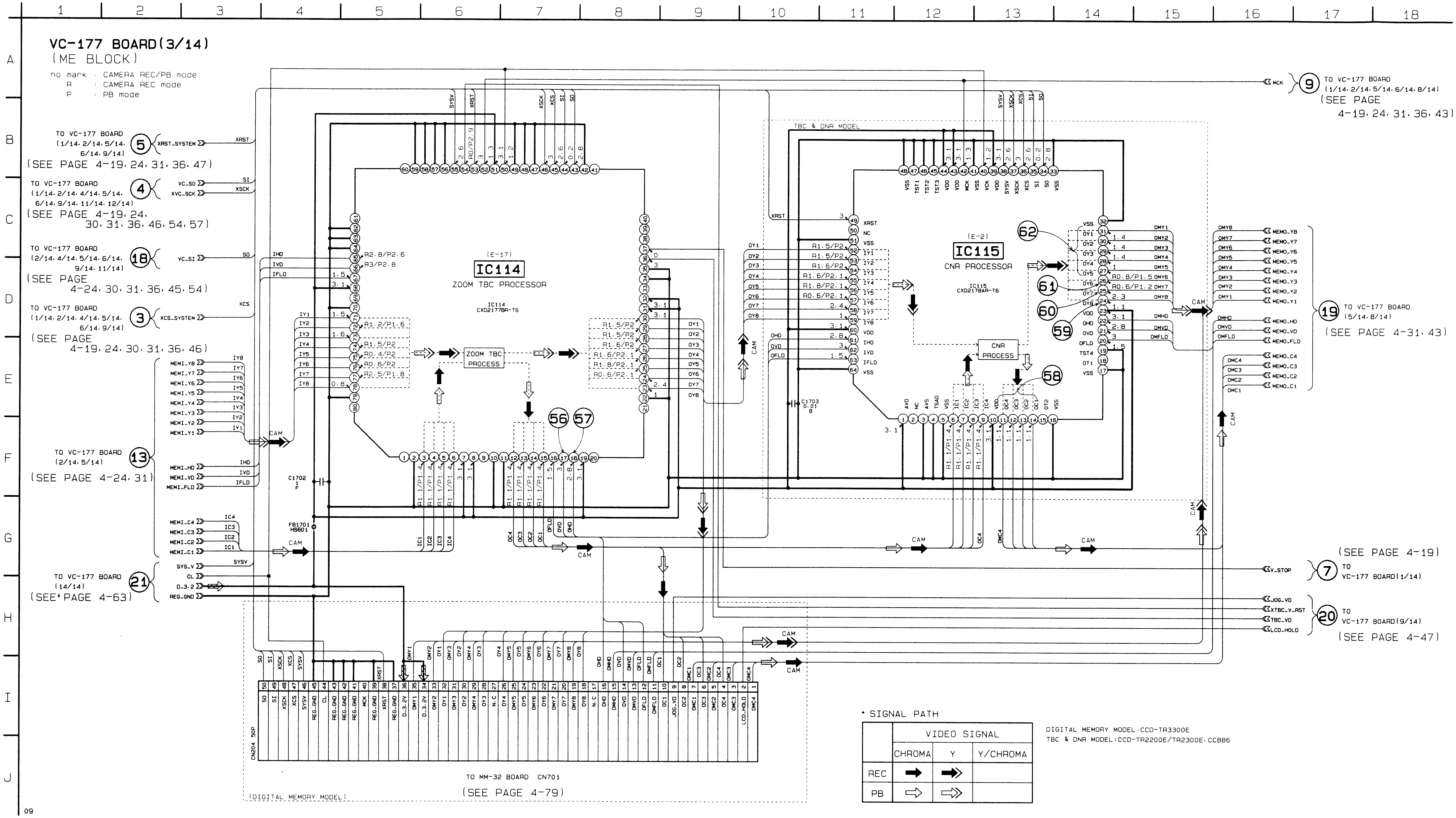
- SIGNAL PATH

|  | VIDEO SIGNAL |  |  |
|---|---|---|---|
|  | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ➡》 | ➡》》 |
| PB | ⇨ |  |  |

## VC-177 (CAMERA (3)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.



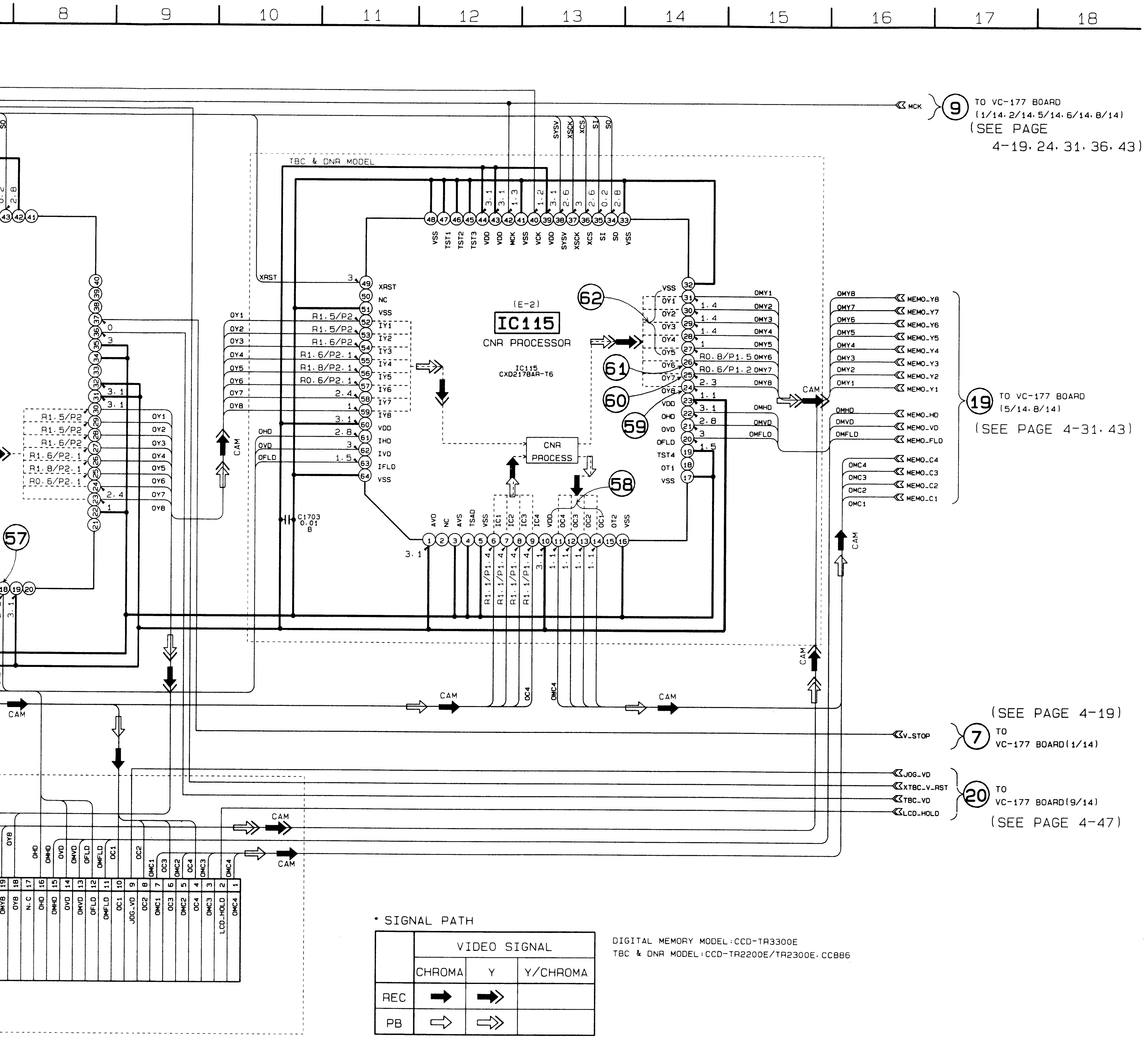
VC-177 BOARD(3/14)
(ME BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
TO VC-177 BOARD (1/14, 2/14, 5/14, 6/14, 9/14) (SEE PAGE 4-19, 24, 31, 36, 47)
XRST_SYSTEM
TO VC-177 BOARD (1/14, 2/14, 4/14, 5/14, 6/14, 9/14, 11/14, 12/14) (SEE PAGE 4-19, 24, 30, 31, 36, 46, 54, 57)
VC_SO
XVC_SCK
TO VC-177 BOARD (2/14, 4/14, 5/14, 6/14, 9/14, 11/14) (SEE PAGE 4-24, 30, 31, 36, 45, 54)
VC_SI
TO VC-177 BOARD (1/14, 2/14, 4/14, 5/14, 6/14, 9/14) (SEE PAGE 4-19, 24, 30, 31, 36, 46)
XCS_SYSTEM
MEMI_Y8
MEMI_Y7
MEMI_Y6
MEMI_Y5
MEMI_Y4
MEMI_Y3
MEMI_Y2
MEMI_Y1
TO VC-177 BOARD (2/14, 5/14) (SEE PAGE 4-24, 31)
MEMI_HD
MEMI_VD
MEMI_FLD
MEMI_C4
MEMI_C3
MEMI_C2
MEMI_C1
TO VC-177 BOARD (14/14) (SEE PAGE 4-63)
SYS_V
CL
D_3.2
REG_GND
IC114
ZOOM TBC PROCESSOR
CXD2177BR-T6
ZOOM TBC PROCESS
(E-17)
C1702
FB1701 HS601
C1703 0.01 B
TBC & DNR MODEL
IC115
CNR PROCESSOR
CXD2178AR-T6
(E-2)
CNR PROCESS
CAM
TO VC-177 BOARD (1/14, 2/14, 5/14, 6/14, 8/14) (SEE PAGE 4-19, 24, 31, 36, 43)
MCK
MEMO_Y8
MEMO_Y7
MEMO_Y6
MEMO_Y5
MEMO_Y4
MEMO_Y3
MEMO_Y2
MEMO_Y1
MEMO_HD
MEMO_VD
MEMO_FLD
MEMO_C4
MEMO_C3
MEMO_C2
MEMO_C1
TO VC-177 BOARD (5/14, 8/14) (SEE PAGE 4-31, 43)
(SEE PAGE 4-19)
V_STOP
TO VC-177 BOARD (1/14)
JOG_VD
XTBC_V_RST
TBC_VD
LCD_HOLD
TO VC-177 BOARD (9/14) (SEE PAGE 4-47)
CN204 50P
TO MM-32 BOARD CN701 (SEE PAGE 4-79)
(DIGITAL MEMORY MODEL)
09

• SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ⇛ | |
| PB | ⇨ | ⇨⇨ | |

DIGITAL MEMORY MODEL : CCD-TR3300E
TBC & DNR MODEL : CCD-TR2200E/TR2300E, CCB86

iring Board.



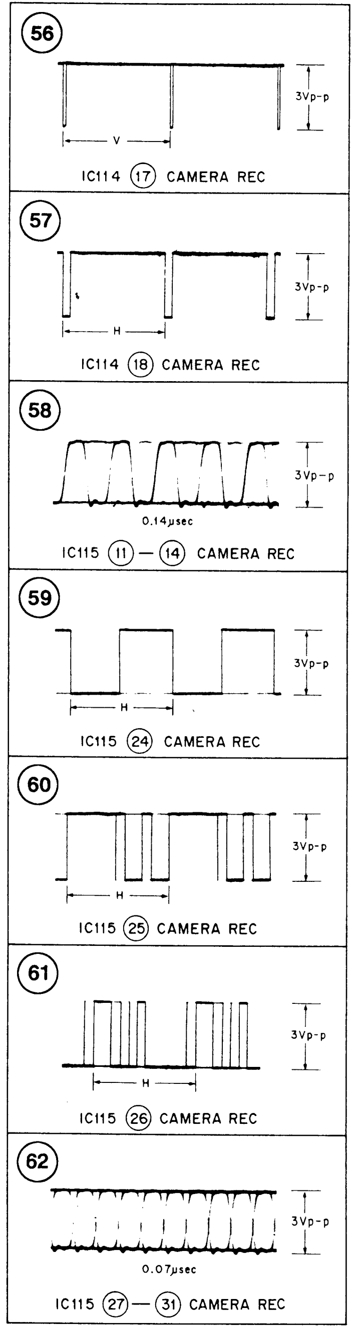
8
9
10
11
12
13
14
15
16
17
18
TBC & DNR MODEL
IC115
(E-2)
CNR PROCESSOR
IC115 CXD2178AR-T6
CNR PROCESS
MCK
TO VC-177 BOARD (1/14, 2/14, 5/14, 6/14, 8/14)
(SEE PAGE 4-19, 24, 31, 36, 43)
TO VC-177 BOARD (5/14, 8/14)
(SEE PAGE 4-31, 43)
MEMO_Y8
MEMO_Y7
MEMO_Y6
MEMO_Y5
MEMO_Y4
MEMO_Y3
MEMO_Y2
MEMO_Y1
MEMO_HD
MEMO_VD
MEMO_FLD
MEMO_C4
MEMO_C3
MEMO_C2
MEMO_C1
V_STOP
(SEE PAGE 4-19)
TO VC-177 BOARD (1/14)
JOG_VD
XTBC_V_RST
TBC_VD
LCD_HOLD
TO VC-177 BOARD (9/14)
(SEE PAGE 4-47)
XRST
C1703 0.01 B
CAM

• SIGNAL PATH

|  | VIDEO SIGNAL |  |  |
|---|---|---|---|
|  | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ⇛ |  |
| PB | ⇨ | ⇨ |  |

DIGITAL MEMORY MODEL : CCD-TR3300E
TBC & DNR MODEL : CCD-TR2200E/TR2300E, CC886

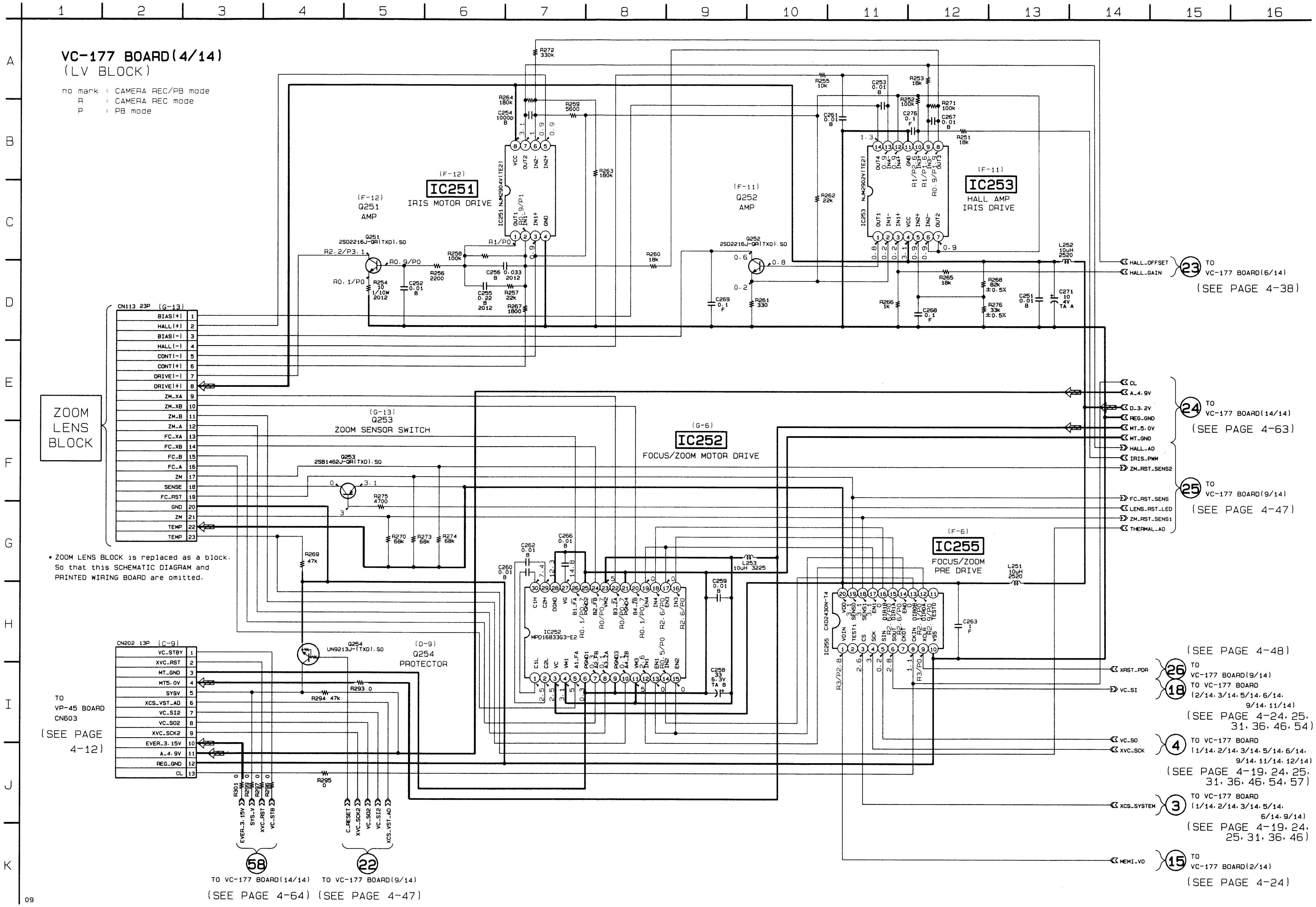
**VC-177** BOARD (ME BLOCK)



## VC-177 (CAMERA (4)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

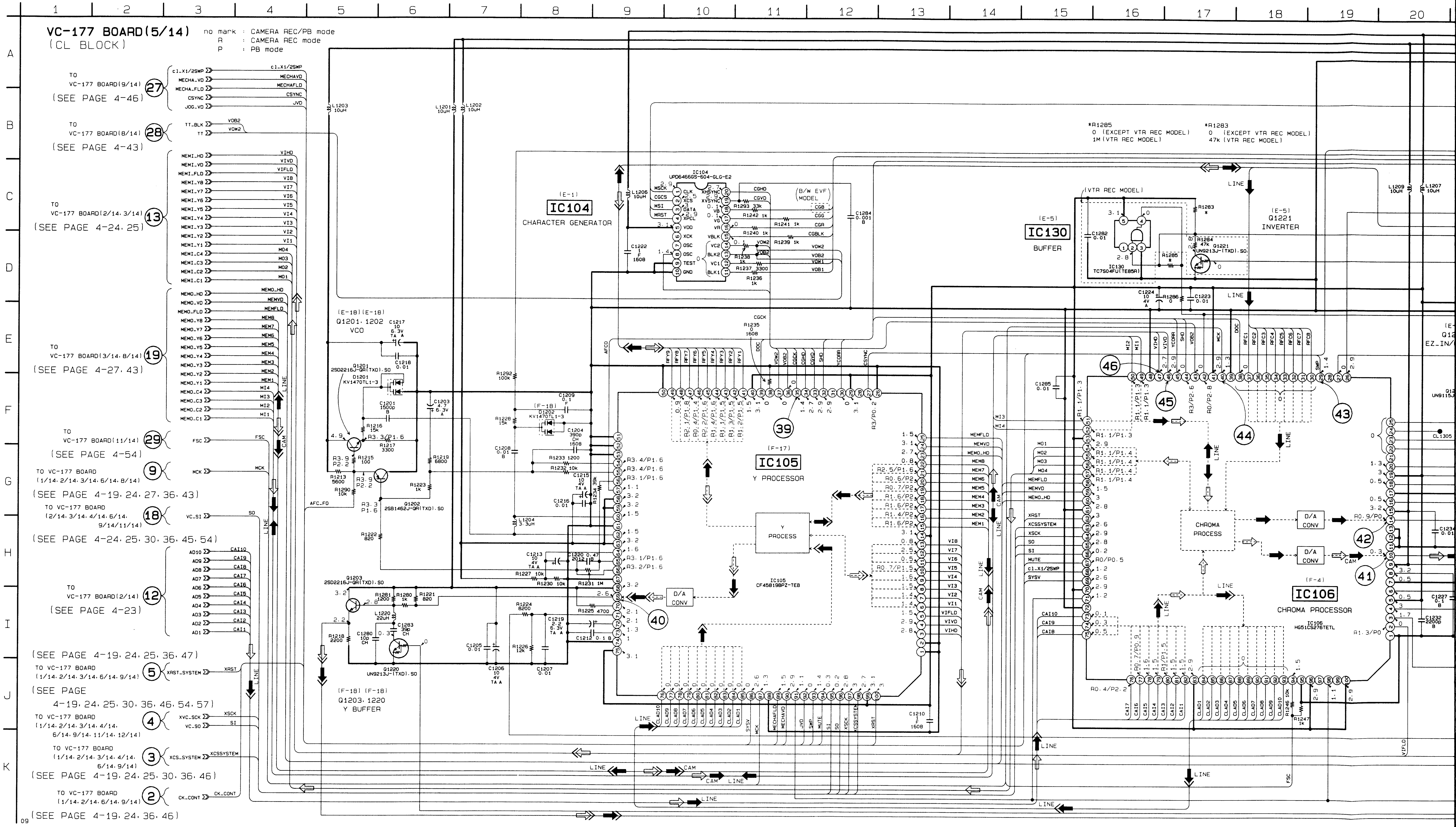
- Refer to page 4-13 for Printed Wiring Board.


VC-177 BOARD(4/14)
(LV BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
IC251
IRIS MOTOR DRIVE
(F-12)
Q251
AMP
IC253
HALL AMP
IRIS DRIVE
(F-11)
Q252
AMP
ZOOM LENS BLOCK
CN113 23P (G-13)
(G-13)
Q253
ZOOM SENSOR SWITCH
IC252
FOCUS/ZOOM MOTOR DRIVE
IC255
FOCUS/ZOOM PRE DRIVE
(D-9)
Q254
PROTECTOR
CN202 13P (C-9)
TO VP-45 BOARD CN603
(SEE PAGE 4-12)
• ZOOM LENS BLOCK is replaced as a block. So that this SCHEMATIC DIAGRAM and PRINTED WIRING BOARD are omitted.
23 TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
24 TO VC-177 BOARD(14/14) (SEE PAGE 4-63)
25 TO VC-177 BOARD(9/14) (SEE PAGE 4-47)
(SEE PAGE 4-48)
26 TO VC-177 BOARD(9/14)
18 TO VC-177 BOARD (2/14, 3/14, 5/14, 6/14, 9/14, 11/14) (SEE PAGE 4-24, 25, 31, 36, 46, 54)
4 TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 6/14, 9/14, 11/14, 12/14) (SEE PAGE 4-19, 24, 25, 31, 36, 46, 54, 57)
3 TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 6/14, 9/14) (SEE PAGE 4-19, 24, 25, 31, 36, 46)
15 TO VC-177 BOARD(2/14) (SEE PAGE 4-24)
58 TO VC-177 BOARD(14/14) (SEE PAGE 4-64)
22 TO VC-177 BOARD(9/14) (SEE PAGE 4-47)
09

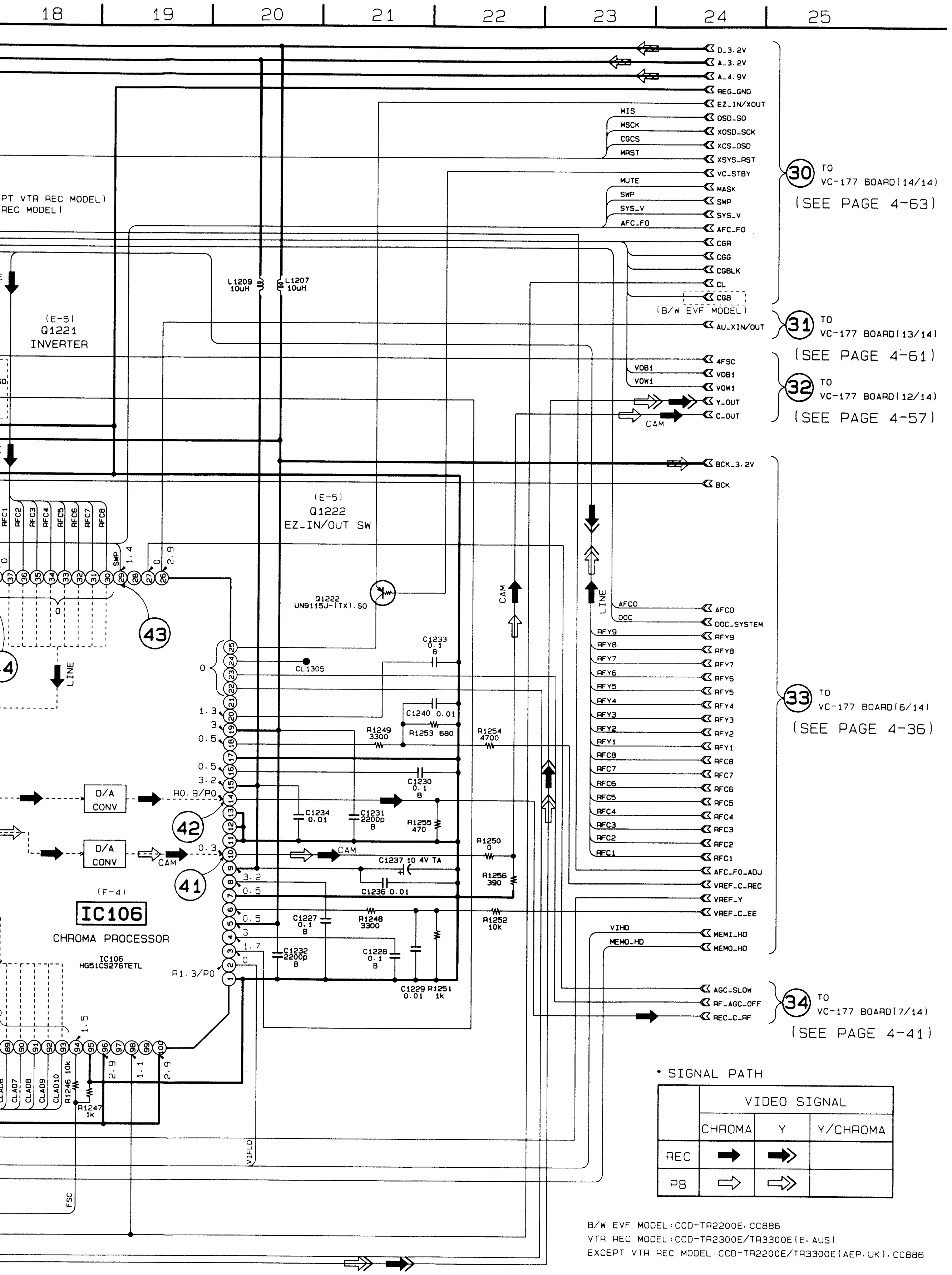
## VC-177 (Y/C PROCESS) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4-13 for Printed Wiring Board.



VC-177 BOARD(5/14)
(CL BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
TO VC-177 BOARD(9/14) (SEE PAGE 4-46)
TO VC-177 BOARD(8/14) (SEE PAGE 4-43)
TO VC-177 BOARD(2/14, 3/14) (SEE PAGE 4-24, 25)
TO VC-177 BOARD(3/14, 8/14) (SEE PAGE 4-27, 43)
TO VC-177 BOARD(11/14) (SEE PAGE 4-54)
TO VC-177 BOARD (1/14, 2/14, 3/14, 6/14, 8/14) (SEE PAGE 4-19, 24, 27, 36, 43)
TO VC-177 BOARD (2/14, 3/14, 4/14, 6/14, 9/14, 11/14) (SEE PAGE 4-24, 25, 30, 36, 45, 54)
TO VC-177 BOARD(2/14) (SEE PAGE 4-23)
(SEE PAGE 4-19, 24, 25, 36, 47)
TO VC-177 BOARD (1/14, 2/14, 3/14, 6/14, 9/14) (SEE PAGE 4-19, 24, 25, 30, 36, 46, 54, 57)
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 6/14, 9/14, 11/14, 12/14)
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 6/14, 9/14) (SEE PAGE 4-19, 24, 25, 30, 36, 46)
TO VC-177 BOARD (1/14, 2/14, 6/14, 9/14) (SEE PAGE 4-19, 24, 36, 46)
(E-1) IC104 CHARACTER GENERATOR
IC104 UPD6466GS-604-GLG-E2
(B/W EVF) MODEL
(E-18)(E-18) Q1201, 1202 VCO
(F-18) Q1202 KV1470TL1-3
(F-17) IC105 Y PROCESSOR
Y PROCESS
D/A CONV
IC105 CF45819BPZ-TEB
Q1203 2SD2216J-QR(TXD).SO
Q1220 UN9213J-(TXD).SO
(F-18) (F-18) Q1203, 1220 Y BUFFER
(E-5) IC130 BUFFER
IC130 TC7S04FU(TE85R)
(VTR REC MODEL)
*R1285 0 (EXCEPT VTR REC MODEL) 1M (VTR REC MODEL)
*R1283 0 (EXCEPT VTR REC MODEL) 47k (VTR REC MODEL)
(E-5) Q1221 INVERTER
Q1221 UN9213J-(TXD).SO
CHROMA PROCESS
(F-4) IC106 CHROMA PROCESSOR
IC106 HG51CS276TETL
LINE
CAM

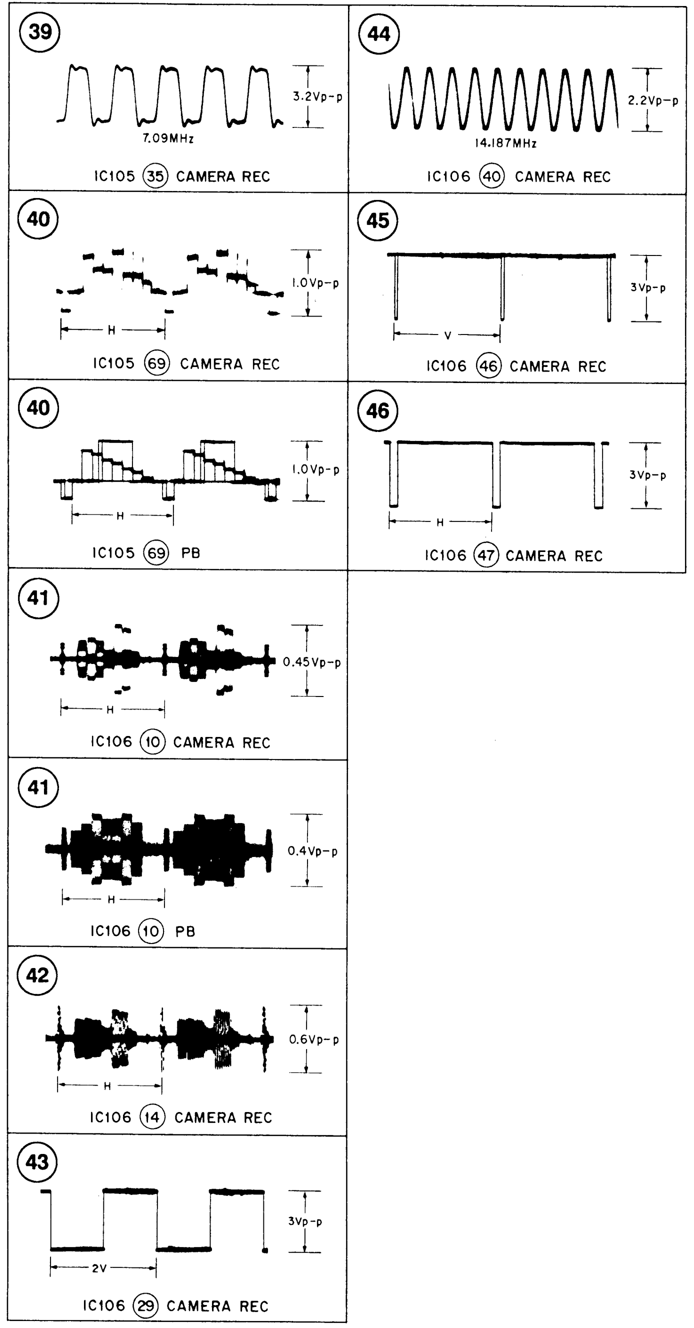

18
19
20
21
22
23
24
25
D_3.2V
A_3.2V
A_4.9V
REG_GND
EZ_IN/XOUT
OSD_SO
XOSD_SCK
XCS_OSD
XSYS_RST
VC_STBY
MASK
SWP
SYS_V
AFC_FO
CGR
CGG
CGBLK
CL
CGB
(B/W EVF MODEL)
AU_XIN/OUT
4FSC
VOB1
VOW1
Y_OUT
C_OUT
CAM
30 TO VC-177 BOARD(14/14) (SEE PAGE 4-63)
31 TO VC-177 BOARD(13/14) (SEE PAGE 4-61)
32 TO VC-177 BOARD(12/14) (SEE PAGE 4-57)
BCK_3.2V
BCK
(E-5) Q1221 INVERTER
(E-5) Q1222 EZ_IN/OUT SW
Q1222 UN9115J-(TX).SO
L1209 10uH
L1207 10uH
PT VTR REC MODEL)
REC MODEL)
AFCO
DOC_SYSTEM
RFY9
RFY8
RFY7
RFY6
RFY5
RFY4
RFY3
RFY2
RFY1
RFC8
RFC7
RFC6
RFC5
RFC4
RFC3
RFC2
RFC1
AFC_FO_ADJ
VREF_C_REC
VREF_Y
VREF_C_EE
MEMI_HD
MEMO_HD
33 TO VC-177 BOARD(6/14) (SEE PAGE 4-36)
AGC_SLOW
RF_AGC_OFF
REC_C_RF
34 TO VC-177 BOARD(7/14) (SEE PAGE 4-41)
(F-4) IC106 CHROMA PROCESSOR
IC106 HG51CS276TETL
D/A CONV
R0.9/P0
R1.3/P0
41
42
43
LINE
CL1305
C1233 0.1 B
C1240 0.01
R1249 3300
R1253 680
R1254 4700
C1230 0.1 B
C1234 0.01
C1231 2200p B
R1255 470
R1250 0
C1237 10 4V TA
R1256 390
C1236 0.01
C1227 0.1 B
R1248 3300
R1252 10k
C1232 2200p B
C1228 0.1 B
C1229 0.01
R1251 1k
R1246 10k
R1247 1k
VIFLD
FSC
VIHD
MEMO_HD

• SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ➡» | |
| PB | ⇨ | ⇨» | |

B/W EVF MODEL : CCD-TR2200E, CC886
VTR REC MODEL : CCD-TR2300E/TR3300E(E, AUS)
EXCEPT VTR REC MODEL : CCD-TR2200E/TR3300E(AEP, UK), CC886

**VC-177** BOARD(CL BLOCK)

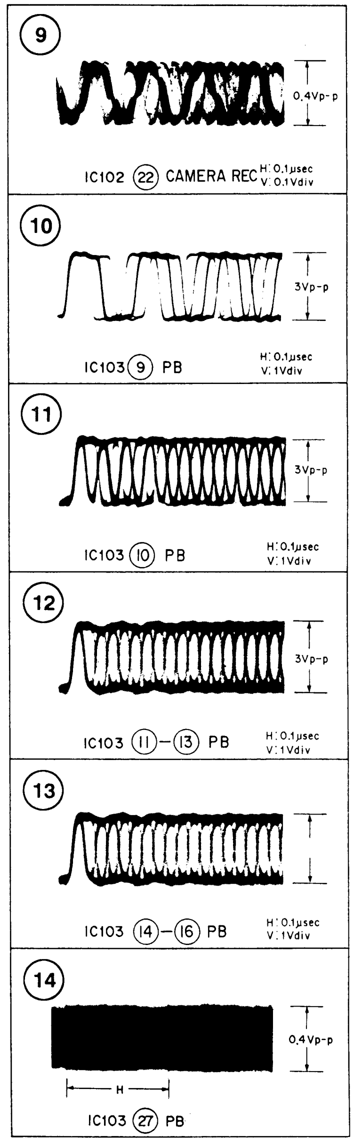


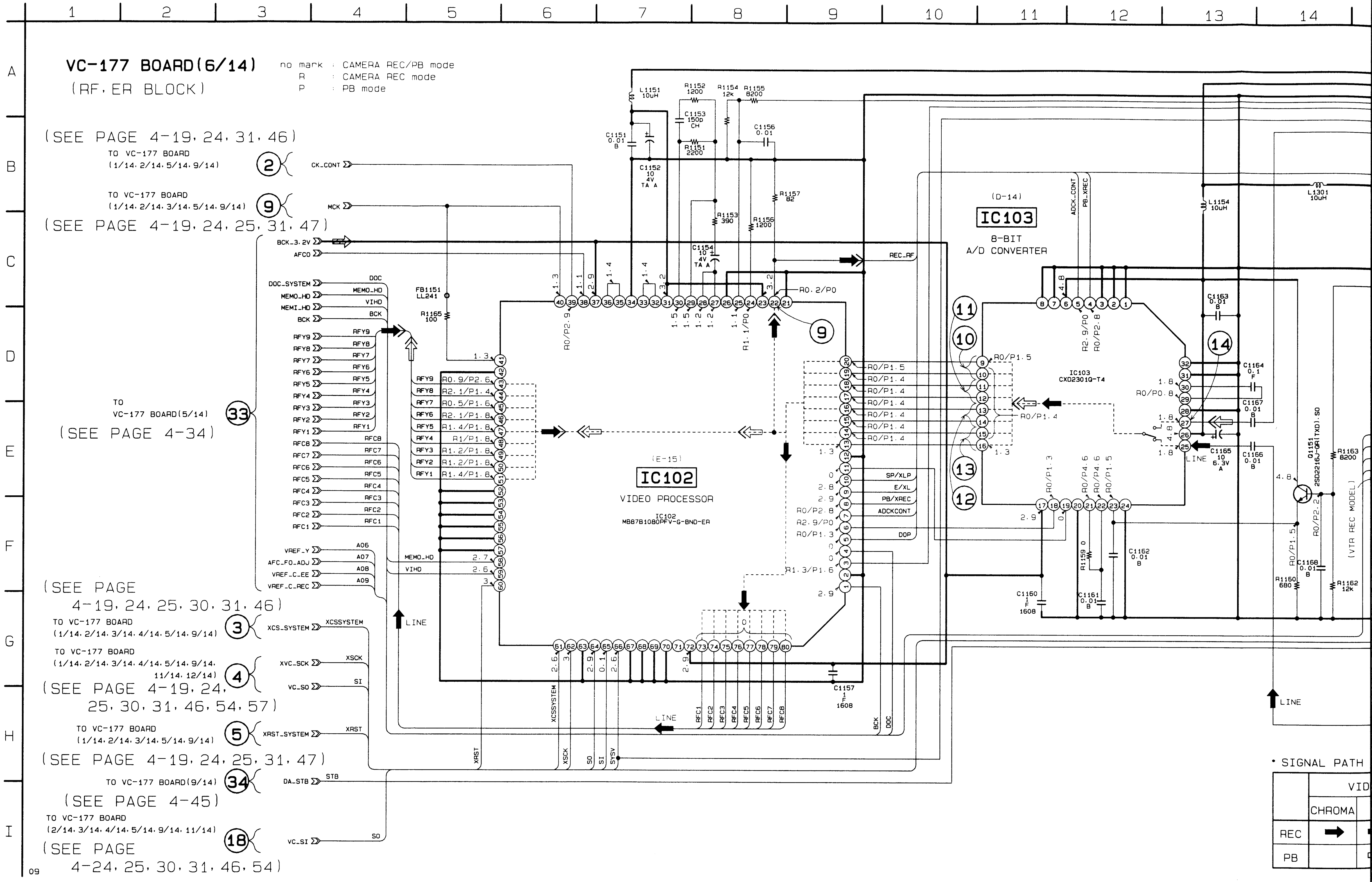
## VC-177 (VIDEO PROCESS (1)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

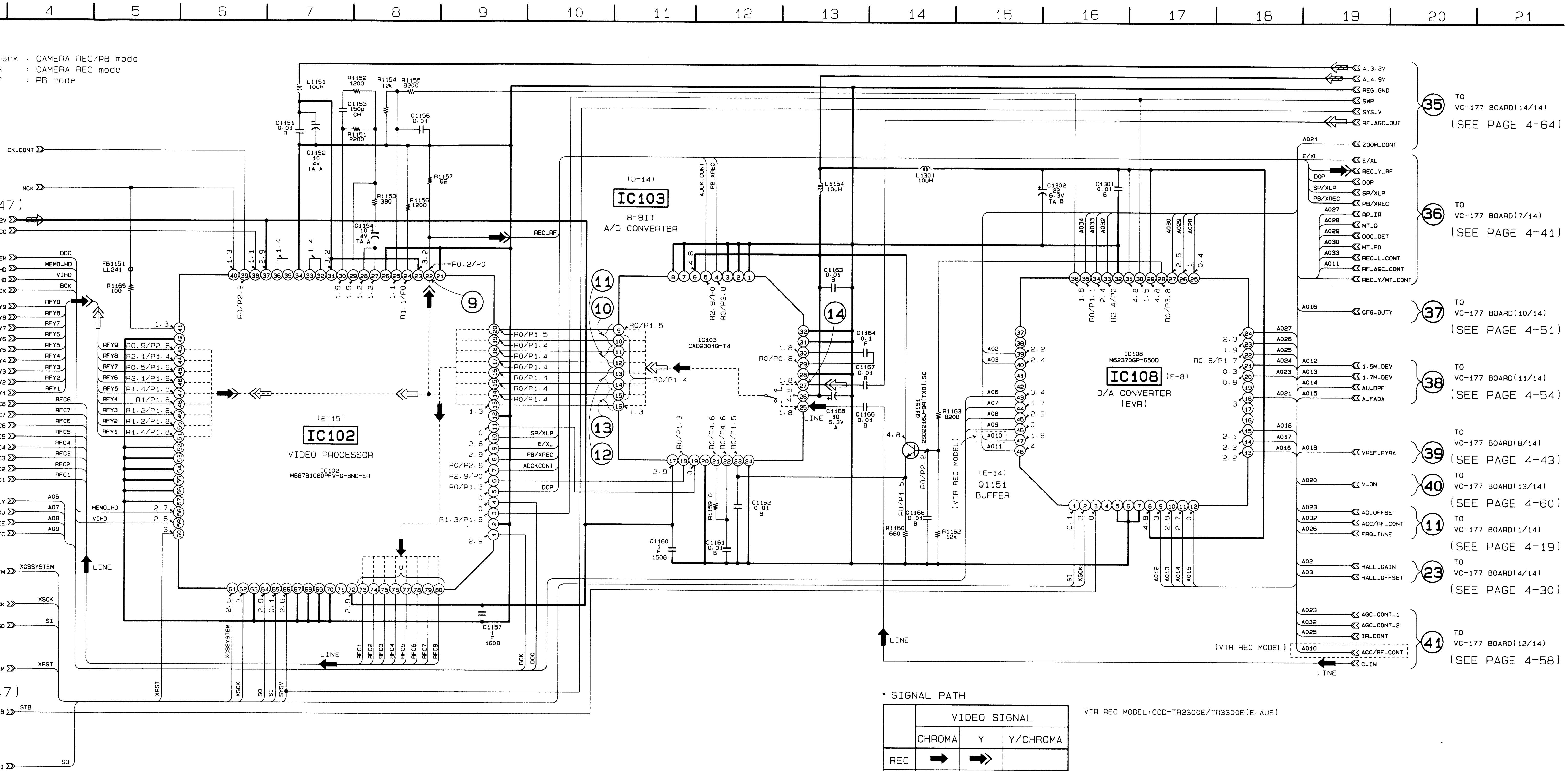
- Refer to page 4-13 for Printed Wiring Board.

**VC-177** BOARD (RF BLOCK)




1 2 3 4 5 6 7 8 9 10 11 12 13 14
A B C D E F G H I
VC-177 BOARD(6/14)
(RF, ER BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
(SEE PAGE 4-19, 24, 31, 46)
TO VC-177 BOARD (1/14, 2/14, 5/14, 9/14)
②
CK_CONT
TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 9/14)
⑨
MCK
(SEE PAGE 4-19, 24, 25, 31, 47)
BCK_3.2V
AFCO
DOC_SYSTEM
MEMO_HD
MEMI_HD
BCK
DOC
VIHD
RFY9 RFY8 RFY7 RFY6 RFY5 RFY4 RFY3 RFY2 RFY1
RFC8 RFC7 RFC6 RFC5 RFC4 RFC3 RFC2 RFC1
TO VC-177 BOARD(5/14)
㉝
(SEE PAGE 4-34)
VREF_Y
AFC_FO_ADJ
VREF_C_EE
VREF_C_REC
A06 A07 A08 A09
(SEE PAGE 4-19, 24, 25, 30, 31, 46)
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 5/14, 9/14)
③
XCS_SYSTEM
XCSSYSTEM
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 5/14, 9/14, 11/14, 12/14)
④
XVC_SCK
XSCK
VC_SO
SI
(SEE PAGE 4-19, 24, 25, 30, 31, 46, 54, 57)
TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 9/14)
⑤
XRST_SYSTEM
XRST
(SEE PAGE 4-19, 24, 25, 31, 47)
TO VC-177 BOARD(9/14)
㉞
DA_STB
STB
(SEE PAGE 4-45)
TO VC-177 BOARD (2/14, 3/14, 4/14, 5/14, 9/14, 11/14)
⑱
VC_SI
SO
(SEE PAGE 4-24, 25, 30, 31, 46, 54)
09
FB1151 LL241
R1165 100
MEMO_HD
VIHD
LINE
L1151 10uH
R1152 1200
R1154 12k
R1155 8200
C1153 150p CH
R1151 2200
C1156 0.01
C1151 0.01 B
C1152 10 4V TA A
R1157 82
R1153 390
R1156 1200
C1154 10 4V TA A
R0. 2/P0
REC_RF
(E-15)
IC102
VIDEO PROCESSOR
IC102 MB87B1080PFV-G-BND-ER
R0. 9/P2. 6
R2. 1/P1. 4
R0. 5/P1. 6
R2. 1/P1. 8
R1. 4/P1. 8
R1/P1. 8
R1. 2/P1. 8
R1. 2/P1. 8
R1. 4/P1. 8
R0/P2. 9
R1. 1/P0
R0/P1. 5
R0/P1. 4
SP/XLP
E/XL
PB/XREC
ADCKCONT
DOP
R0/P2. 8
R2. 9/P0
R0/P1. 3
R1. 3/P1. 6
C1157 1 1608
XCSSYSTEM
XRST
XSCK
SO
SI
SYSV
RFC1 RFC2 RFC3 RFC4 RFC5 RFC6 RFC7 RFC8
BCK
DOC
(D-14)
IC103
8-BIT A/D CONVERTER
IC103 CXD2301Q-T4
ADCK_CONT
PB_XREC
R2. 9/P0
R0/P2. 8
R0/P0. 8
R0/P1. 5
R0/P1. 4
R0/P1. 3
R0/P4. 6
R0/P4. 6
R0/P1. 5
C1160 1 1608
C1161 0.01 B
R1159 0
C1162 0.01 B
C1163 0.01 B
C1164 0.1 F
C1167 0.01 B
C1165 10 6.3V A
C1166 0.01 B
L1154 10uH
L1301 10uH
Q1151 2SD2216J-QR(TX).SO
R1163 8200
R1160 680
C1168 0.01 B
R1162 12k
R0/P1. 5
R0/P2. 2
(VTR REC MODEL)
LINE
• SIGNAL PATH
VID
CHROMA
REC
PB

**IC DIAGRAM** • Refer to page 4-13 for Printed Wiring Board.



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19
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21
: CAMERA REC/PB mode
: CAMERA REC mode
: PB mode
IC102
VIDEO PROCESSOR
IC102 M887B1080PFV-G-BND-ER
(E-15)
IC103
8-BIT A/D CONVERTER
IC103 CXD2301Q-T4
(D-14)
IC108
D/A CONVERTER (EVR)
IC108 M62370GP-650D
(E-8)
Q1151 BUFFER
Q1151 2SC2216J-QRTX0(.SO)
(E-14)
(VTR REC MODEL)
LINE
TO VC-177 BOARD(14/14) (SEE PAGE 4-64)
TO VC-177 BOARD(7/14) (SEE PAGE 4-41)
TO VC-177 BOARD(10/14) (SEE PAGE 4-51)
TO VC-177 BOARD(11/14) (SEE PAGE 4-54)
TO VC-177 BOARD(8/14) (SEE PAGE 4-43)
TO VC-177 BOARD(13/14) (SEE PAGE 4-60)
TO VC-177 BOARD(1/14) (SEE PAGE 4-19)
TO VC-177 BOARD(4/14) (SEE PAGE 4-30)
TO VC-177 BOARD(12/14) (SEE PAGE 4-58)
A_3.2V
A_4.9V
REG_GND
SWP
SYS_V
RF_AGC_OUT
ZOOM_CONT
E/XL
REC_Y_RF
DOP
SP/XLP
PB/XREC
RP_IR
MT_Q
DOC_DET
MT_FO
REC_L_CONT
RF_AGC_CONT
REC_Y/MT_CONT
CFG_DUTY
1.5M_DEV
1.7M_DEV
AU_BPF
A_FADA
VREF_PYRA
V_ON
AD_OFFSET
ACC/RF_CONT
FRQ_TUNE
HALL_GAIN
HALL_OFFSET
AGC_CONT_1
AGC_CONT_2
IR_CONT
ACC/RF_CONT
C_IN

• SIGNAL PATH

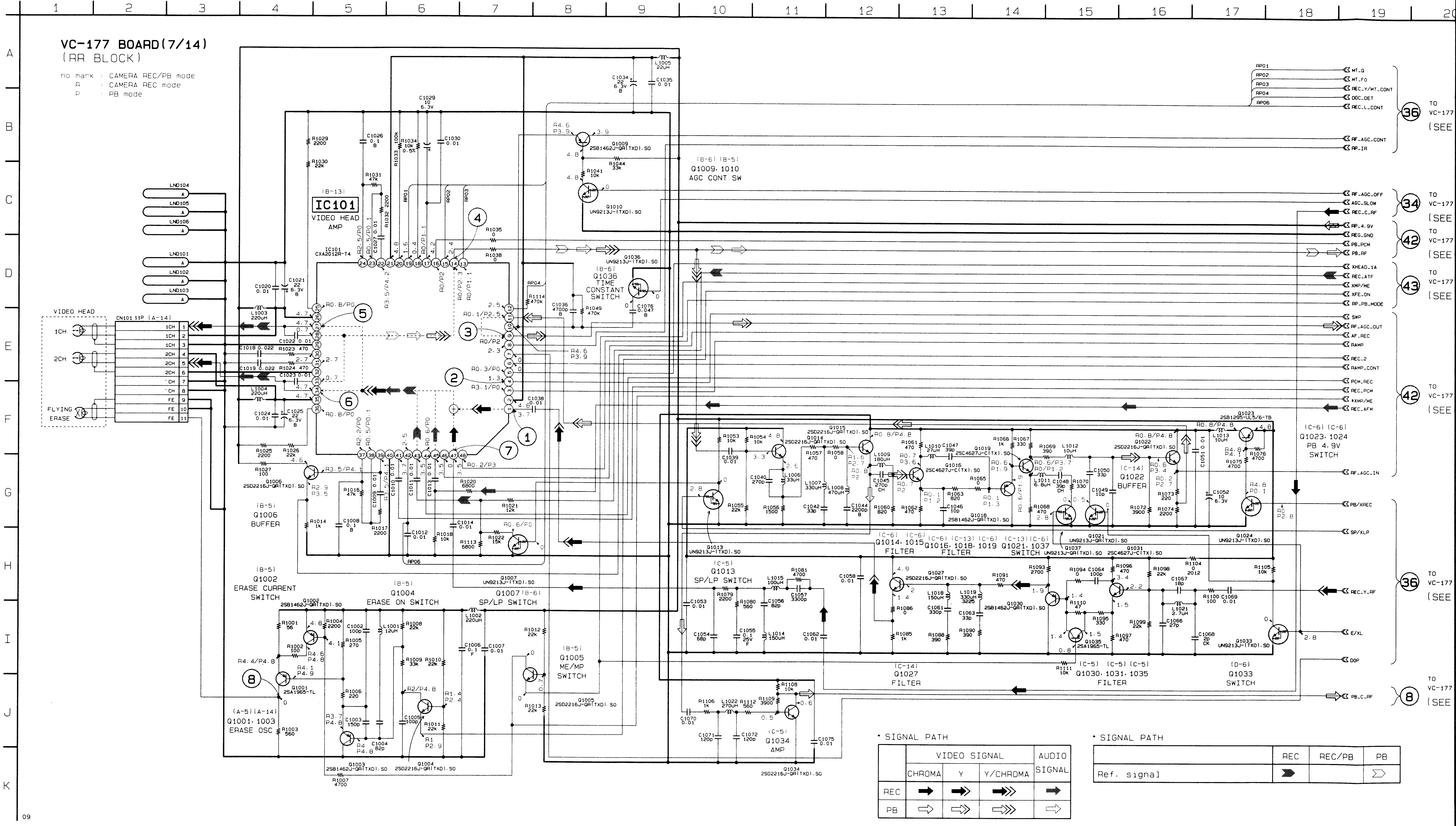
| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ➡ | |
| PB | | ⇨ | |

VTR REC MODEL:CCD-TR2300E/TR3300E(E, AUS)

## VC-177 (REC/PB HEAD AMP) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4-13 for Printed Wiring Board.



VC-177 BOARD(7/14)
(RR BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
IC101
VIDEO HEAD AMP
IC101 CXA2012R-T4
VIDEO HEAD
1CH
2CH
FLYING ERASE
CN101 11P (A-14)
(B-5) Q1006 BUFFER
(B-5) Q1002 ERASE CURRENT SWITCH
(B-5) Q1004 ERASE ON SWITCH
Q1007 (B-6) SP/LP SWITCH
(B-5) Q1005 ME/MP SWITCH
(A-5) (A-14) Q1001, 1003 ERASE OSC
(B-6) (B-5) Q1009, 1010 AGC CONT SW
(B-6) Q1036 TIME CONSTANT SWITCH
(C-6) (C-6) Q1014, 1015 FILTER
(C-6) (C-13) (C-6) Q1016, 1018, 1019 FILTER
(C-13) (C-6) Q1021, 1037 SWITCH
(C-14) Q1022 BUFFER
(C-6) (C-6) Q1023, 1024 PB 4.9V SWITCH
(C-5) Q1013 SP/LP SWITCH
(C-14) Q1027 FILTER
(C-5) (C-5) (C-5) Q1030, 1031, 1035 FILTER
(D-6) Q1033 SWITCH
(C-5) Q1034 AMP
TO VC-177 (SEE
RF_AGC_CONT
RP_IR
RF_AGC_OFF
AGC_SLOW
REC_C_RF
RP_4.9V
REG_GND
PB_PCM
PB_RF
XHEAD_1A
REC_ATF
XMP/ME
XFE_ON
RP_PB_MODE
SWP
RF_AGC_OUT
AF_REC
RAMP
REC_2
RAMP_CONT
PCM_REC
REC_PCM
XXMP/ME
REC_AFM
RF_AGC_IN
PB/XREC
SP/XLP
REC_Y_RF
E/XL
DOP
PB_C_RF
MT_Q
MT_FO
REC_Y/MT_CONT
DOC_DET
REC_L_CONT
36
34
42
43
42
36
8

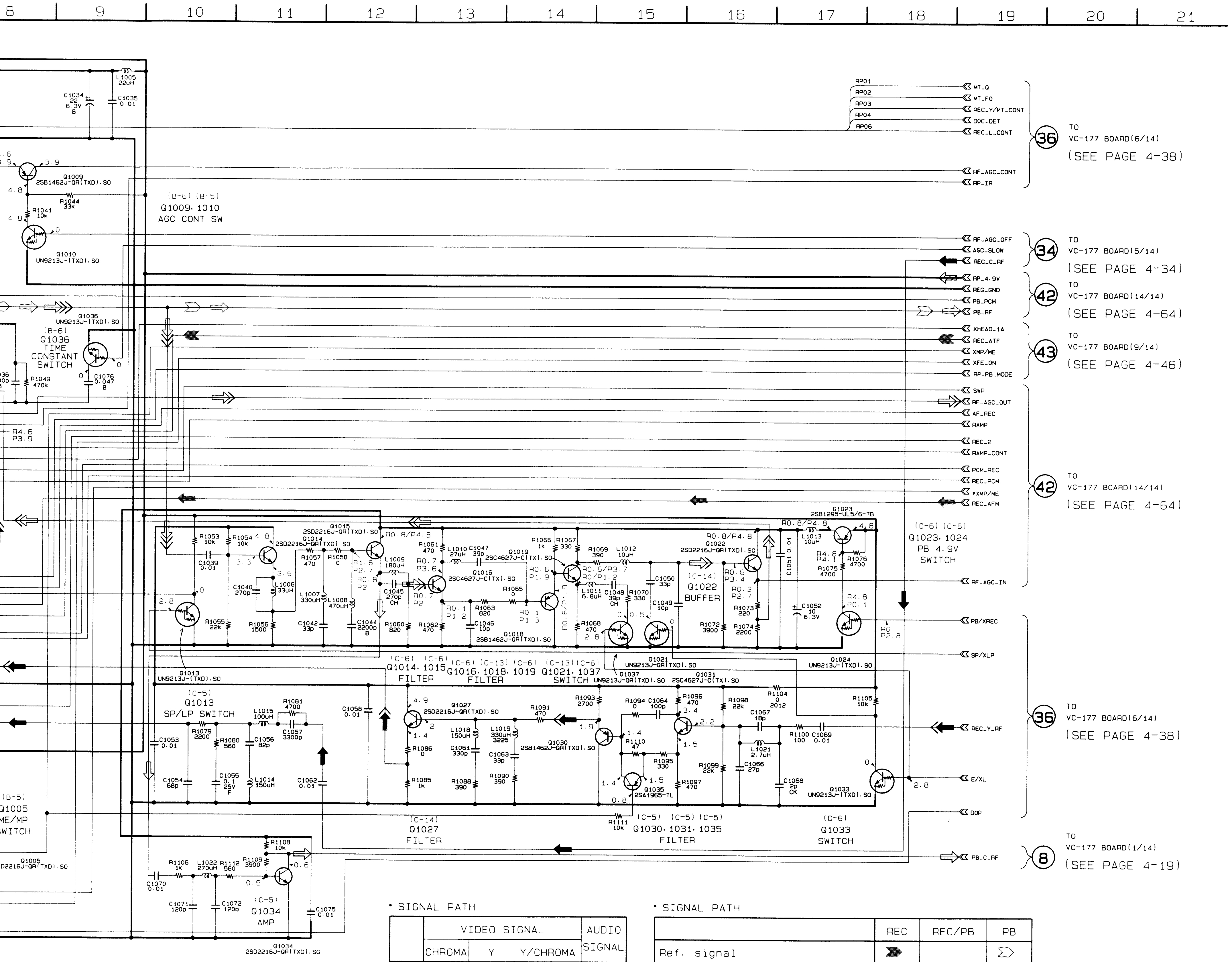
• SIGNAL PATH

| | VIDEO SIGNAL | | | AUDIO SIGNAL |
|---|---|---|---|---|
| | CHROMA | Y | Y/CHROMA | |
| REC | ➡ | ➡➡ | ➡➡➡ | ➡ |
| PB | ⇨ | ⇨⇨ | ⇨⇨⇨ | ⇨ |

• SIGNAL PATH

| | REC | REC/PB | PB |
|---|---|---|---|
| Ref. signal | ➡ | | ⇨ |

iring Board.


8
9
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13
14
15
16
17
18
19
20
21
RP01
RP02
RP03
RP04
RP06
MT_Q
MT_FO
REC_Y/MT_CONT
DOC_DET
REC_L_CONT
RF_AGC_CONT
RP_IR
TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
36
RF_AGC_OFF
AGC_SLOW
REC_C_RF
TO VC-177 BOARD(5/14) (SEE PAGE 4-34)
34
RP_4.9V
REG_GND
PB_PCM
PB_RF
TO VC-177 BOARD(14/14) (SEE PAGE 4-64)
42
XHEAD_1A
REC_ATF
XMP/ME
XFE_ON
RP_PB_MODE
TO VC-177 BOARD(9/14) (SEE PAGE 4-46)
43
SWP
RF_AGC_OUT
AF_REC
RAMP
REC_2
RAMP_CONT
PCM_REC
REC_PCM
XMP/ME
REC_AFM
TO VC-177 BOARD(14/14) (SEE PAGE 4-64)
42
RF_AGC_IN
PB/XREC
SP/XLP
REC_Y_RF
E/XL
DOP
TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
36
PB_C_RF
TO VC-177 BOARD(1/14) (SEE PAGE 4-19)
8
(B-6) (B-5) Q1009, 1010 AGC CONT SW
Q1009 2SB1462J-QR(TXD).SO
Q1010 UN9213J-(TXD).SO
(B-6) Q1036 TIME CONSTANT SWITCH
Q1036 UN9213J-(TXD).SO
(C-6) (C-6) Q1023, 1024 PB 4.9V SWITCH
Q1023 2SB1295-UL5/6-TB
Q1024 UN9213J-(TXD).SO
Q1013 UN9213J-(TXD).SO
(C-6) (C-6) Q1014, 1015 FILTER
(C-6) (C-13) (C-6) (C-13) (C-6) Q1016, 1018, 1019 FILTER
Q1021, 1037 SWITCH
Q1014 2SD2216J-QR(TXD).SO
Q1015 2SD2216J-QR(TXD).SO
Q1016 2SC4627J-C(TX).SO
Q1018 2SB1462J-QR(TXD).SO
Q1019 2SC4627J-C(TX).SO
Q1021 UN9213J-QR(TXD).SO
Q1037 UN9213J-QR(TXD).SO
(C-14) Q1022 BUFFER
Q1022 2SD2216J-QR(TXD).SO
(C-5) Q1013 SP/LP SWITCH
Q1027 2SD2216J-QR(TXD).SO
(C-14) Q1027 FILTER
Q1030 2SB1462J-QR(TXD).SO
Q1031 2SC4627J-C(TX).SO
Q1035 2SA1965-TL
(C-5) (C-5) (C-5) Q1030, 1031, 1035 FILTER
Q1033 UN9213J-(TXD).SO
(D-6) Q1033 SWITCH
(C-5) Q1034 AMP
Q1034 2SD2216J-QR(TXD).SO
(B-5) Q1005 ME/MP SWITCH
Q1005 2SD2216J-QR(TXD).SO
L1005 22uH
C1034 22 6.3V
C1035 0.01
R1044 33k
R1041 10k
R1049 470k
C1076 0.047
R1053 10k
R1054 10k
C1039 0.01
C1040 270p
L1006 33uH
R1057 470
R1058 0
L1007 330uH
L1008 470uH
R1055 22k
R1056 1500
C1042 33p
C1044 2200p
L1009 180uH
C1045 270p
R1060 820
R1062 470
R1061 470
L1010 27uH
C1047 39p
R1063 820
C1046 10p
R1065 0
R1066 1k
R1067 330
R1069 390
L1012 10uH
L1011 6.8uH
C1048 39p
R1070 330
R1068 470
C1050 33p
C1049 10p
R1072 3900
R1074 2200
R1073 220
C1051 0.01
L1013 10uH
R1075 4700
R1076 4700
C1052 10 6.3V
R1079 2200
R1080 560
L1015 100uH
R1081 4700
C1057 3300p
C1056 82p
C1053 0.01
C1054 68p
C1055 0.1 25V
L1014 150uH
C1062 0.01
C1058 0.01
R1086 0
R1085 1k
L1018 150uH
L1019 330uH
C1061 330p
C1063 33p
R1088 390
R1090 390
R1091 470
R1093 2700
R1094 0
C1064 100p
R1096 470
R1110 47
R1095 330
R1097 470
R1099 22k
R1098 22k
C1067 18p
L1021 2.7uH
C1066 27p
R1104 0 2012
R1100 100
C1059 0.01
C1068 2p
R1105 10k
R1111 10k
R1106 1k
L1022 270uH
R1112 560
R1109 3900
R1108 10k
C1070 0.01
C1071 120p
C1072 120p
C1075 0.01

* SIGNAL PATH

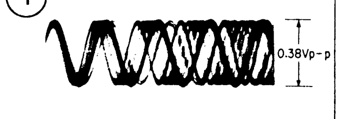
| | VIDEO SIGNAL | | | AUDIO SIGNAL |
|---|---|---|---|---|
| | CHROMA | Y | Y/CHROMA | |
| REC | ➡ | ➡➡ | ➡➡» | ➡ |
| PB | ⇨ | ⇨⇨ | ⇨⇨» | ⇨ |

* SIGNAL PATH

| | REC | REC/PB | PB |
|---|---|---|---|
| Ref. signal | ➤ | | ▷ |

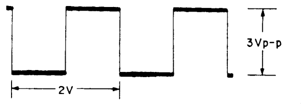
**VC-177** BOARD (RR BLOCK)

①



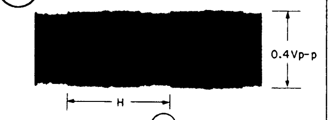
IC101 ① CAMERA REC H:0.1μsec V:0.2Vdiv

②



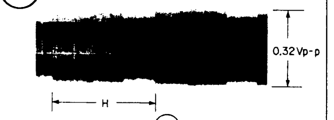
IC101 ④ CAMERA REC/PB

③



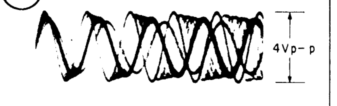
IC101 ⑨ PB

④



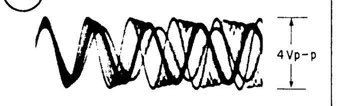
IC101 ⑭ PB

⑤



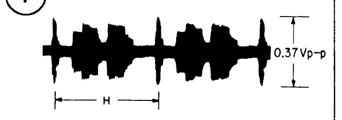
IC101 ㉗ CAMERA REC H:0.1μsec V:1Vdiv

⑥



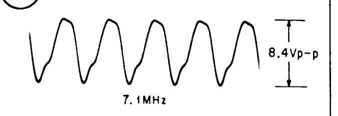
IC101 ㉞ CAMERA REC H:0.1μsec V:1Vdiv

⑦



IC101 ㊼ CAMERA REC

⑧



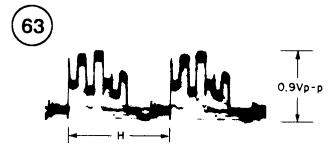
Q1001 Ⓒ CAMERA REC

## VC-177 (VIDEO PROCESS (2)) SCHEMATIC DIAGRAM

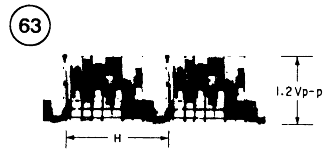
— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.

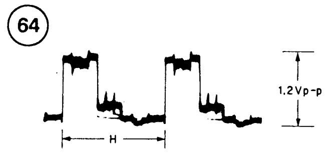
**VC-177** BOARD (PY BLOCK)



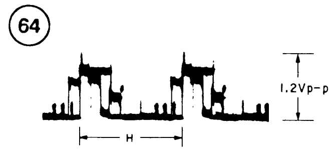
IC800 (14) CAMERA REC



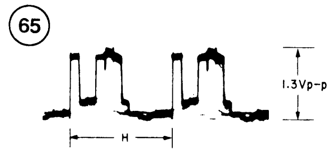
IC800 (14) PB



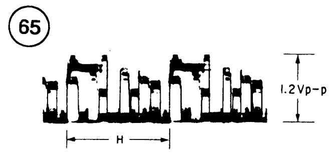
IC800 (19) CAMERA REC



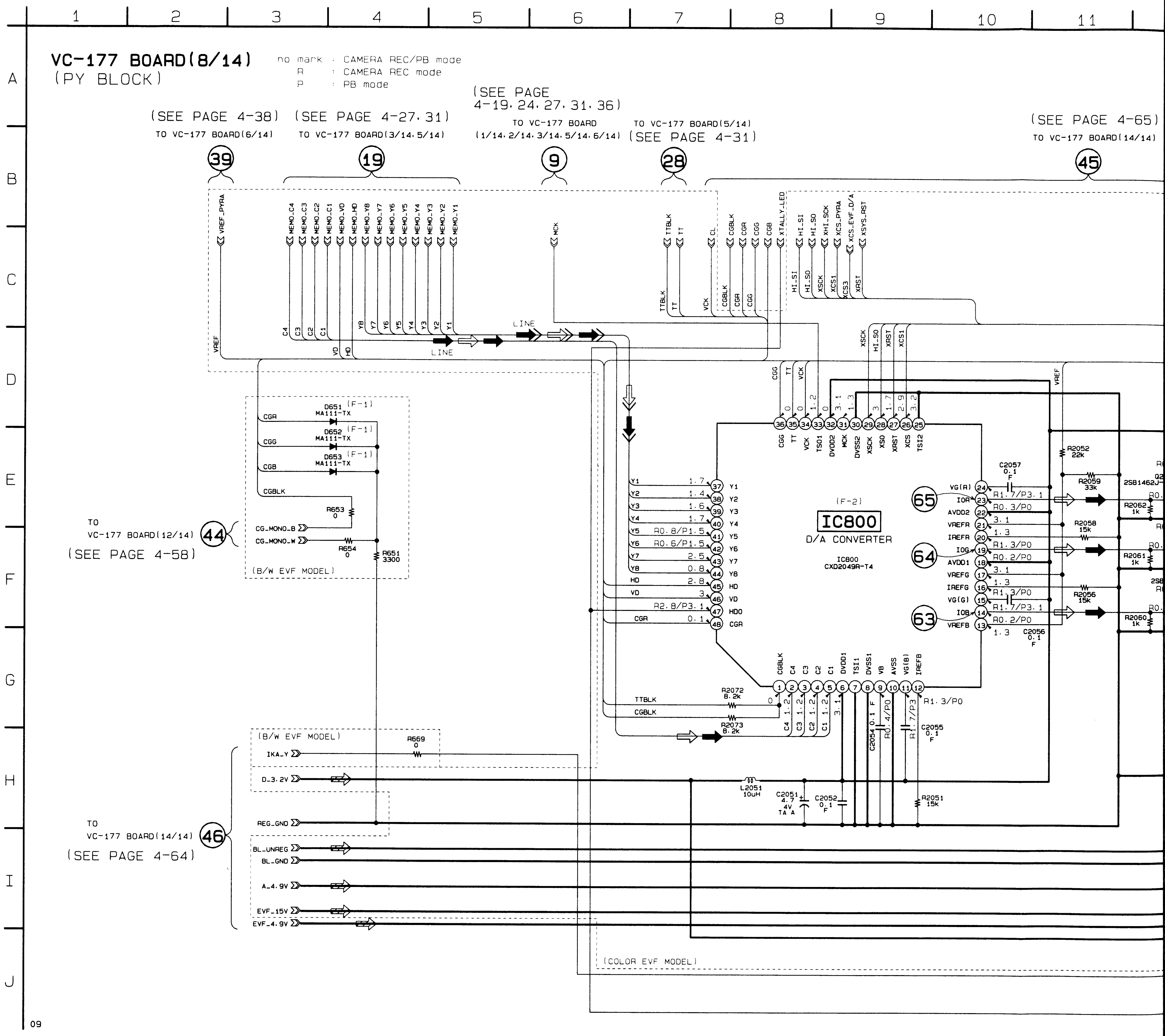
IC800 (19) PB



IC800 (23) CAMERA REC



IC800 (23) PB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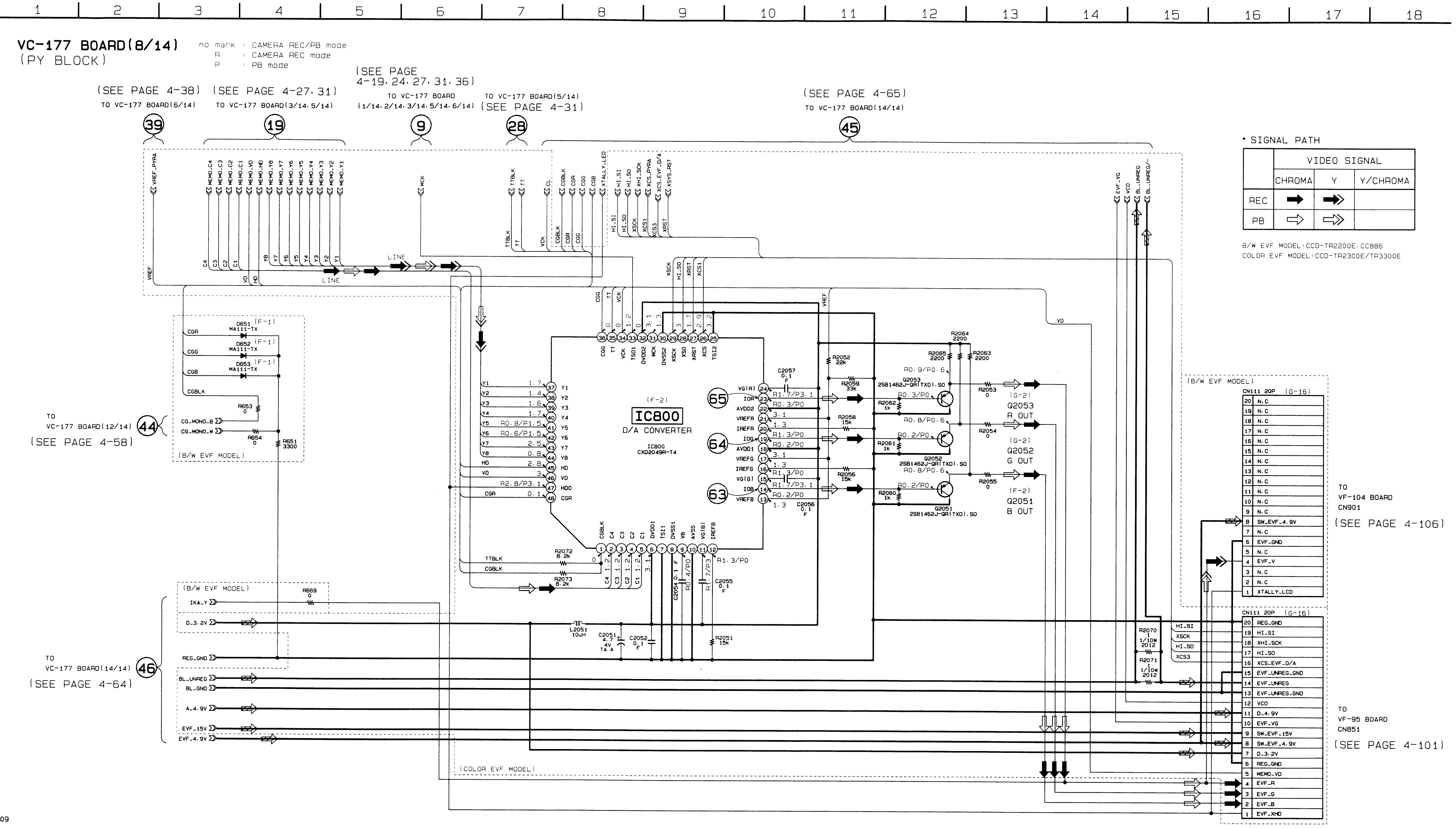
A
B
C
D
E
F
G
H
I
J
VC-177 BOARD(8/14)
(PY BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
(SEE PAGE 4-38)
TO VC-177 BOARD(6/14)
39
(SEE PAGE 4-27, 31)
TO VC-177 BOARD(3/14, 5/14)
19
(SEE PAGE 4-19, 24, 27, 31, 36)
TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 6/14)
9
TO VC-177 BOARD(5/14)
(SEE PAGE 4-31)
28
(SEE PAGE 4-65)
TO VC-177 BOARD(14/14)
45
VREF_PYRA
MEMO_C4
MEMO_C3
MEMO_C2
MEMO_C1
MEMO_VD
MEMO_HD
MEMO_Y8
MEMO_Y7
MEMO_Y6
MEMO_Y5
MEMO_Y4
MEMO_Y3
MEMO_Y2
MEMO_Y1
MCK
TTBLK
TT
CL
CGBLK
CGR
CGG
CGB
XTALLY_LED
HI_SI
HI_SO
XHI_SCK
XCS_PYRA
XCS_EVF_D/A
XSYS_RST
LINE
D651 (F-1) MA111-TX
D652 (F-1) MA111-TX
D653 (F-1) MA111-TX
CGR
CGG
CGB
CGBLK
R653 0
CG_MONO_B
CG_MONO_W
R654 0
R651 3300
(B/W EVF MODEL)
TO VC-177 BOARD(12/14)
44
(SEE PAGE 4-58)
IC800 (F-2)
IC800
D/A CONVERTER
IC800 CXD2049R-T4
Y1 Y2 Y3 Y4 Y5 Y6 Y7 Y8 HD VD HDO CGR
CGG TT VCK TSO1 DVDD2 MCK DVSS2 XSCK XSO XRST XCS TSI2
CGBLK C4 C3 C2 C1 DVDD1 TSI1 DVSS1 VB AVSS VG(B) IREFB
VG(R) IOR AVDD2 VREFR IREFR IOG AVDD1 VREFG IREFG VG(G) IOB VREFB
65
64
63
R0.8/P1.5
R0.6/P1.5
R2.8/P3.1
R1.7/P3.1
R0.3/P0
R1.3/P0
R0.2/P0
R1.4/P0
R1.7/P3
R1.3/P0
C2057 0.1 F
R2052 22k
R2059 33k
R2062 1k
R2058 15k
R2061 1k
R2056 15k
R2060 1k
C2056 0.1 F
2SB1462J
R2072 8.2k
R2073 8.2k
TTBLK
CGBLK
C2054 0.1 F
C2055 0.1 F
R2051 15k
L2051 10uH
C2051 4.7 4V TA A
C2052 0.1 F
(B/W EVF MODEL)
R669 0
IKA_Y
D_3.2V
REG_GND
BL_UNREG
BL_GND
A_4.9V
EVF_15V
EVF_4.9V
TO VC-177 BOARD(14/14)
46
(SEE PAGE 4-64)
(COLOR EVF MODEL)
09

# VC-177 (VIDEO PROCESS (2)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.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11
12
13
14
15
16
17
18
VC-177 BOARD(8/14)
(PY BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
(SEE PAGE 4-38)
TO VC-177 BOARD(6/14)
39
(SEE PAGE 4-27, 31)
TO VC-177 BOARD(3/14, 5/14)
19
(SEE PAGE 4-19, 24, 27, 31, 36)
TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 6/14)
9
TO VC-177 BOARD(5/14)
(SEE PAGE 4-31)
28
(SEE PAGE 4-65)
TO VC-177 BOARD(14/14)
45
VREF_PYRA
MEMO_C4
MEMO_C3
MEMO_C2
MEMO_C1
MEMO_VD
MEMO_HD
MEMO_Y8
MEMO_Y7
MEMO_Y6
MEMO_Y5
MEMO_Y4
MEMO_Y3
MEMO_Y2
MEMO_Y1
MCK
TTBLK
TT
CL
CGBLK
CGR
CGG
CGB
XTALLY_LED
HI_SI
HI_SO
XHI_SCK
XCS_PYRA
XCS_EVF_D/A
XSYS_RST
EVF_VG
VCO
BL_UNREG
BL_UNREG/-
LINE
VREF
VD
D651 (F-1) MA111-TX
D652 (F-1) MA111-TX
D653 (F-1) MA111-TX
CGR
CGG
CGB
CGBLK
R653 0
CG_MONO_B
CG_MONO_W
R654 0
R651 3300
(B/W EVF MODEL)
TO VC-177 BOARD(12/14)
44
(SEE PAGE 4-58)
IC800
D/A CONVERTER
(F-2)
IC800 CXD2049R-T4
Y1
Y2
Y3
Y4
Y5
Y6
Y7
Y8
HD
VD
HDO
CGR
TTBLK
CGBLK
R2072 8.2k
R2073 8.2k
VG(R)
IOR
AVDD2
VREFR
IREFR
IOG
AVDD1
VREFG
IREFG
VG(G)
IOB
VREFB
C2057 0.1 F
R2052 22k
R2059 33k
R2058 15k
R2056 15k
R2062 1k
R2061 1k
R2060 1k
R2064 2200
R2065 2200
R2063 2200
R2053 0
R2054 0
R2055 0
Q2053 2SB1462J-QR(TXD).SO
Q2052 2SB1462J-QR(TXD).SO
Q2051 2SB1462J-QR(TXD).SO
(G-2) Q2053 R OUT
(G-2) Q2052 G OUT
(F-2) Q2051 B OUT
65
64
63
C2056 0.1 F
C2054 0.1 F
C2055 0.1 F
L2051 10uH
C2051 4.7 4V TA A
C2052 0.1 F
R2051 15k
R2070 1/10W 2012
R2071 1/10W 2012
(B/W EVF MODEL)
IKA_Y
R669 0
D_3.2V
REG_GND
BL_UNREG
BL_GND
A_4.9V
EVF_15V
EVF_4.9V
TO VC-177 BOARD(14/14)
46
(SEE PAGE 4-64)
(COLOR EVF MODEL)
HI_SI
XSCK
HI_SO
XCS3
(B/W EVF MODEL)
CN111 20P (G-16)
20 N.C
19 N.C
18 N.C
17 N.C
16 N.C
15 N.C
14 N.C
13 N.C
12 N.C
11 N.C
10 N.C
9 N.C
8 SW_EVF_4.9V
7 N.C
6 EVF_GND
5 N.C
4 EVF_V
3 N.C
2 N.C
1 XTALLY_LCD
TO VF-104 BOARD CN901
(SEE PAGE 4-106)
CN111 20P (G-16)
20 REG_GND
19 HI_SI
18 XHI_SCK
17 HI_SO
16 XCS_EVF_D/A
15 EVF_UNREG_GND
14 EVF_UNREG
13 EVF_UNREG_GND
12 VCO
11 D_4.9V
10 EVF_VG
9 SW_EVF_15V
8 SW_EVF_4.9V
7 D_3.2V
6 REG_GND
5 MEMO_VD
4 EVF_R
3 EVF_G
2 EVF_B
1 EVF_XHD
TO VF-95 BOARD CN851
(SEE PAGE 4-101)

• SIGNAL PATH

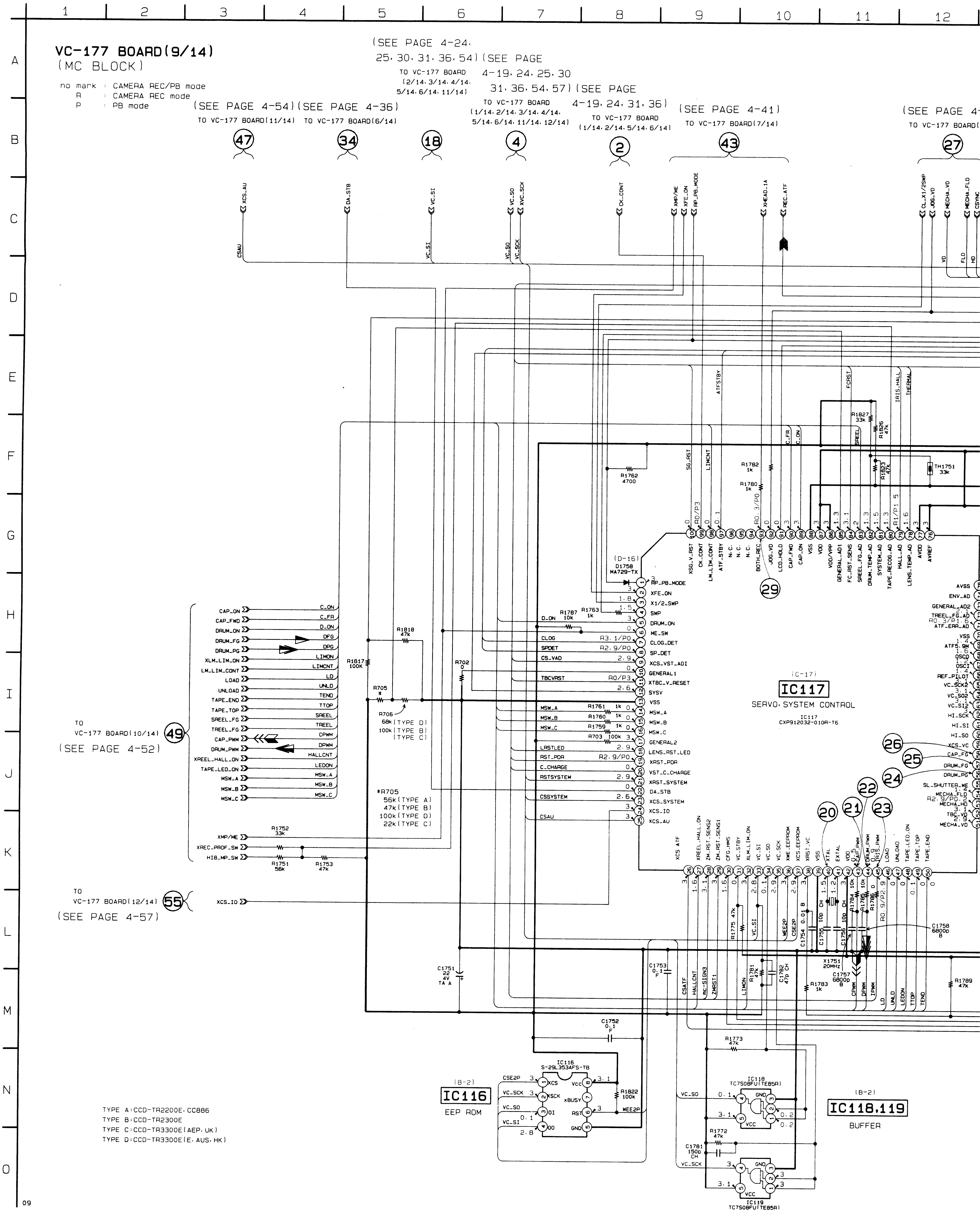
| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ➡ | |
| PB | ⇨ | ⇨ | |

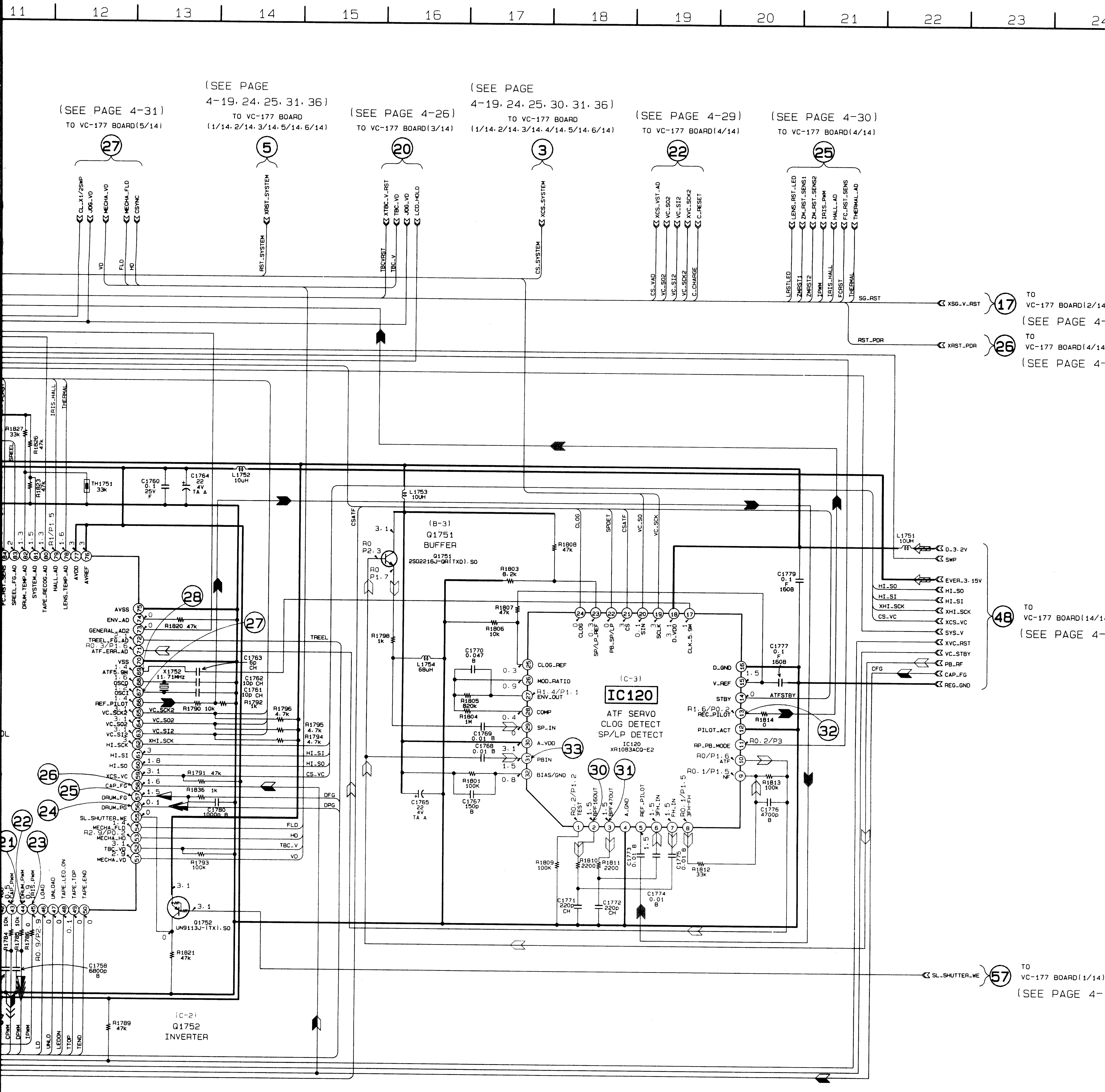
B/W EVF MODEL: CCD-TR2200E, CC886
COLOR EVF MODEL: CCD-TR2300E/TR3300E

## VC-177 (SERVO/SYSTEM CONTROL) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

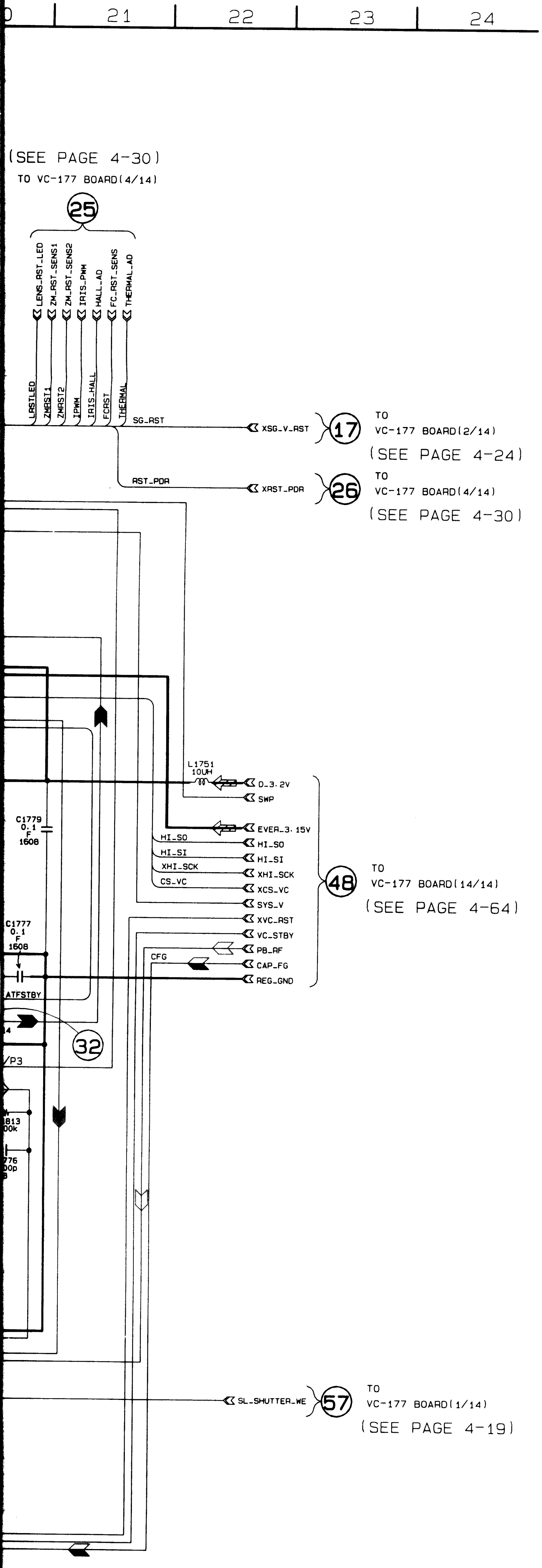
- Refer to page 4–13 for Printed Wiring Board.


1 2 3 4 5 6 7 8 9 10 11 12
A B C D E F G H I J K L M N O
VC-177 BOARD(9/14)
(MC BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
(SEE PAGE 4-54) TO VC-177 BOARD(11/14) 47
(SEE PAGE 4-36) TO VC-177 BOARD(6/14) 34
(SEE PAGE 4-24, 25, 30, 31, 36, 54) TO VC-177 BOARD (2/14, 3/14, 4/14, 5/14, 6/14, 11/14) 18
(SEE PAGE 4-19, 24, 25, 30 31, 36, 54, 57) TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 5/14, 6/14, 11/14, 12/14) 4
(SEE PAGE 4-19, 24, 31, 36) TO VC-177 BOARD (1/14, 2/14, 5/14, 6/14) 2
(SEE PAGE 4-41) TO VC-177 BOARD(7/14) 43
(SEE PAGE 4-
TO VC-177 BOARD(
27
XCS_AU
DA_STB
VC_SI
VC_SO
XVC_SCK
CK_CONT
XMP/ME
XFE_ON
RP_PB_MODE
XHEAD_1A
REC_ATF
CL_X1/2SWP
JOG_VD
MECHA_VD
MECHA_FLD
CSYNC
CSAU
VD
FLD
HD
ATFSTBY
FCRST
IRIS_HALL
THERMAL
R1827 33k
R1826 47k
R1823 47k
TH1751 33k
SREEL
C_FR
C_ON
SG_RST
LIMCNT
R1782 1k
R1780 1k
R1762 4700
(D-16) D1758 MA729-TX
XSG_V_RST
CK_CONT
LM_LIM_CONT
ATF_STBY
N.C.
N.C.
N.C.
BOTH_REC
JOG_VD
LCD_HOLD
CAP_FWD
CAP_ON
VSS
VDD
VDD/VPP
GENERAL_AD1
FC_RST_SENS
SREEL_FG_AD
DRUM_TEMP_AD
SYSTEM_AD
TAPE_RECOG_AD
HALL_AD
LENS_TEMP_AD
AVDD
AVREF
29
RP_PB_MODE
XFE_ON
X1/2_SWP
SWP
DRUM_ON
ME_SW
CLOG_DET
SP_DET
XCS_VST_ADI
GENERAL1
XTBC_V_RESET
SYSV
VSS
MSW_A
MSW_B
MSW_C
GENERAL2
LENS_RST_LED
XRST_PDR
VST_C_CHARGE
XRST_SYSTEM
DA_STB
XCS_SYSTEM
XCS_IO
XCS_AU
D_ON
R1787 10k
R1763 1k
CLOG
SPDET
CS_VAD
TBCVRST
MSW_A
MSW_B
MSW_C
R1761 1k
R1760 1k
R1759 1k
R703 100k
LRSTLED
RST_PDR
C_CHARGE
RSTSYSTEM
CSSYSTEM
CSAU
R3.1/P0
R2.9/P0
R0/P3
(C-17)
IC117
SERVO, SYSTEM CONTROL
IC117
CXP912032-010R-T6
AVSS
ENV_AD
GENERAL_AD2
TREEL_FG_AD
R0.3/P1.6
ATF_ERR_AD
VSS
ATF5.9M
OSCO
OSCI
REF_PILOT
VC_SCK2
VC_SO2
VC_SI2
HI_SCK
HI_SI
HI_SO
XCS_VC
CAP_FG
DRUM_FG
DRUM_PG
SL_SHUTTER_WE
MECHA_FLD
R2.9/P0.2
MECHA_HD
TBC_VD
MECHA_VD
26
25
24
22
20
21
23
XCS ATF
XREEL_HALL_ON
ZM_RST_SENS2
ZM_RST_SENS1
CFG_HMS
VC_STBY
XLM_LIM_ON
VC_SI
VC_SO
VC_SCK
XWE_EEPROM
XCS_EEPROM
XRST_VC
VSS
XTAL
EXTAL
VDD
CAP_PWM
DRUM_PWM
IRIS_PWM
LOAD
UNLOAD
TAPE_LED_ON
TAPE_TOP
TAPE_END
R0.9/P2.9
R1775 47k
VC_SI
WEE2P
CSE2P
C1754 0.01 B
C1755 10p CH
C1756 10p CH
R1784 10k
R1785 10k
R1786 0
C1758 6800p B
X1751 20MHz
C1757 6800p B
C1753 0.1 F
CSATF
HALLCNT
mC-SIGN3
ZMRST1
LIMON
R1781 47k
C1782 47p CH
R1783 1k
CPWM
DPWM
IPWM
LD
UNLD
LEDON
TTOP
TEND
R1789 47k
CAP_ON
CAP_FWD
DRUM_ON
DRUM_FG
DRUM_PG
XLM_LIM_ON
LM_LIM_CONT
LOAD
UNLOAD
TAPE_END
TAPE_TOP
SREEL_FG
TREEL_FG
CAP_PWM
DRUM_PWM
XREEL_HALL_ON
TAPE_LED_ON
MSW_A
MSW_B
MSW_C
C_ON
C_FR
D_ON
DFG
DPG
LIMON
LIMCNT
LD
UNLD
TEND
TTOP
SREEL
TREEL
CPWM
DPWM
HALLCNT
LEDON
MSW_A
MSW_B
MSW_C
TO VC-177 BOARD(10/14) 49
(SEE PAGE 4-52)
R1818 47k
R1817 100K
R702 0
R705 *
R706
68k (TYPE D)
100k (TYPE B)
(TYPE C)
*R705
56k (TYPE A)
47k (TYPE B)
100k (TYPE D)
22k (TYPE C)
XMP/ME
XREC_PROF_SW
HI8_MP_SW
R1752 33k
R1751 56k
R1753 47k
TO VC-177 BOARD(12/14) 55
(SEE PAGE 4-57)
XCS_IO
C1751 22 4V TA A
C1752 0.1 F
IC116 S-29L353AFS-TB
CSE2P
VC_SCK
VC_SO
VC_SI
XCS
XSCK
DI
DO
VCC
XBUSY
RST
GND
WEE2P
R1822 100k
(B-2) IC116
EEP ROM
R1773 47k
IC118 TC7S08FU(TE85R)
VC_SO
GND
VCC
R1772 47k
C1781 150p CH
VC_SCK
IC119 TC7S08FU(TE85R)
(B-2) IC118, 119
BUFFER
TYPE A: CCD-TR2200E, CC886
TYPE B: CCD-TR2300E
TYPE C: CCD-TR3300E(AEP, UK)
TYPE D: CCD-TR3300E(E, AUS, HK)
09


11
12
13
14
15
16
17
18
19
20
21
22
23
(SEE PAGE 4-31)
TO VC-177 BOARD(5/14)
27
(SEE PAGE 4-19, 24, 25, 31, 36)
TO VC-177 BOARD (1/14, 2/14, 3/14, 5/14, 6/14)
5
(SEE PAGE 4-26)
TO VC-177 BOARD(3/14)
20
(SEE PAGE 4-19, 24, 25, 30, 31, 36)
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 5/14, 6/14)
3
(SEE PAGE 4-29)
TO VC-177 BOARD(4/14)
22
(SEE PAGE 4-30)
TO VC-177 BOARD(4/14)
25
CL_X1/2SWP
JOG_VD
MECHA_VD
MECHA_FLD
CSYNC
XRST_SYSTEM
XTBC_V_RST
TBC_VD
JOG_VD
LCD_HOLD
XCS_SYSTEM
XCS_VST_AD
VC_SO2
VC_SI2
XVC_SCK2
C_RESET
LENS_RST_LED
ZM_RST_SENS1
ZM_RST_SENS2
IRIS_PWM
HALL_AD
FC_RST_SENS
THERMAL_AD
XSG_V_RST
17
TO VC-177 BOARD(2/14
(SEE PAGE 4-
XRST_POR
26
TO VC-177 BOARD(4/14
(SEE PAGE 4-
SG_RST
RST_POR
D_3.2V
SWP
EVER_3.15V
HI_SO
HI_SI
XHI_SCK
XCS_VC
SYS_V
XVC_RST
VC_STBY
PB_RF
CAP_FG
REG_GND
48
TO VC-177 BOARD(14/1
(SEE PAGE 4-
SL_SHUTTER_WE
57
TO VC-177 BOARD(1/14)
(SEE PAGE 4-
(B-3)
Q1751
BUFFER
Q1751 2SD2216J-QR(TXD).SO
(C-3)
IC120
ATF SERVO
CLOG DETECT
SP/LP DETECT
IC120 XR1083ACQ-E2
CLOG_REF
MOD_RATIO
ENV_OUT
COMP
SP_IN
A_VDD
PBIN
BIAS/GND
D_GND
V_REF
STBY
REC_PILOT
PILOT_ACT
RP_PB_MODE
ATF
NF
ATFSTBY
TEST
BPF160UT
BPF470UT
A_GND
REF_PILOT
3FH_IN
FH_IN
3FH-FH
CLOG
SP/LP_REF
PB_SP/LP
CS
SIN
SCLK
D_VDD
CLK_5.9M
28
27
30
31
32
33
26
25
24
22
23
21
AVSS
ENV_AD
GENERAL_AD2
TREEL_FG_AD
ATF_ERR_AD
VSS
ATF5.9M
OSCO
OSCI
REF_PILOT
VC_SCK2
VC_SO2
VC_SI2
HI_SCK
HI_SI
HI_SO
XCS_VC
CAP_FG
DRUM_FG
DRUM_PG
SL_SHUTTER_WE
MECHA_FLD
MECHA_HD
TBC_VD
MECHA_VD
X1752 11.71MHz
AVREF
AVDD
LENS_TEMP_AD
HALL_AD
TAPE_RECOG_AD
SYSTEM_AD
DRUM_TEMP_AD
SPEEL_FG_AD
TH1751 33k
L1752 10uH
L1753 10UH
L1754 68uH
L1751 10UH
(C-2)
Q1752
INVERTER
Q1752 UN9113J-(TX).SO
CAP_PWM
DRUM_PWM
IRIS_PWM
LOAD
UNLOAD
TAPE_LED_ON
TAPE_TOP
TAPE_END
CPWM
DPWM
IPWM
LD
UNLD
LEDON
TTOP
TEND
(B-2)
118.119
BUFFER

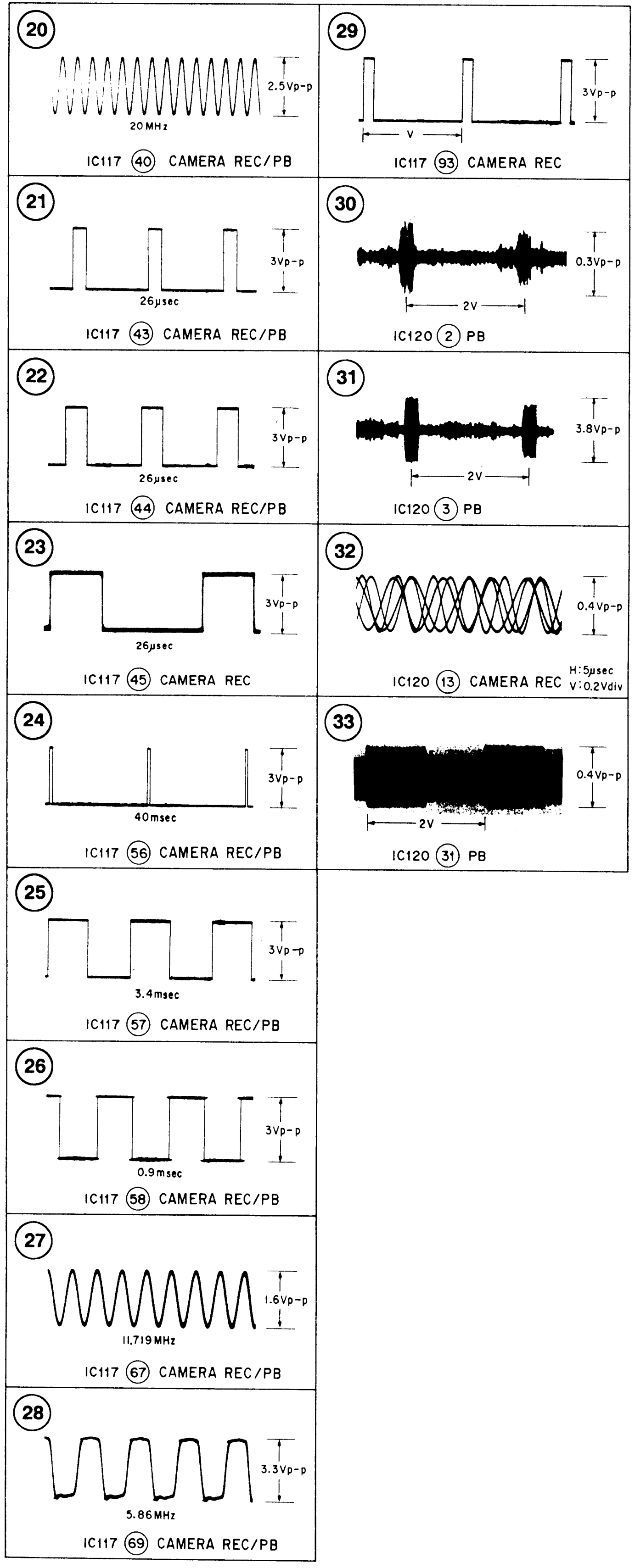
• SIGNAL PATH

| | REC | REC/PB | PB |
|---|---|---|---|
| Drum speed servo | | ▷ | |
| Drum phase servo | | ➢ | |
| Drum servo(speed and phase) | | ⏩ | |
| Capstan speed servo | | ➤ | |
| Capstan servo(speed and phase) | | ➤» | |
| Ref. signal | ➤ | | ▷ |


21
22
23
24
(SEE PAGE 4-30)
TO VC-177 BOARD(4/14)
25
LENS_RST_LED
ZM_RST_SENS1
ZM_RST_SENS2
IRIS_PWM
HALL_AD
FC_RST_SENS
THERMAL_AD
LRSTLED
ZMRST1
ZMRST2
IPWM
IRIS_HALL
FCRST
THERMAL
SG_RST
XSG_V_RST
17
TO
VC-177 BOARD(2/14)
(SEE PAGE 4-24)
RST_PDR
XRST_PDR
26
TO
VC-177 BOARD(4/14)
(SEE PAGE 4-30)
L1751
10UH
D_3.2V
SWP
EVER_3.15V
HI_SO
HI_SI
XHI_SCK
CS_VC
HI_SO
HI_SI
XHI_SCK
XCS_VC
SYS_V
XVC_RST
VC_STBY
PB_RF
CFG
CAP_FG
REG_GND
48
TO
VC-177 BOARD(14/14)
(SEE PAGE 4-64)
C1779
0.1
F
1608
C1777
0.1
F
1608
ATFSTBY
32
/P3
SL_SHUTTER_WE
57
TO
VC-177 BOARD(1/14)
(SEE PAGE 4-19)

| REC/PB | PB |
|---|---|
| ▷ | |
| ▷ | |
| ▷ | |
| ▷ | |
| ▷›› | |
| | ▷ |

**VC-177** BOARD (MC BLOCK)



## FP-249 (TAPE SENSOR) **FLEXIBLE BOARD**

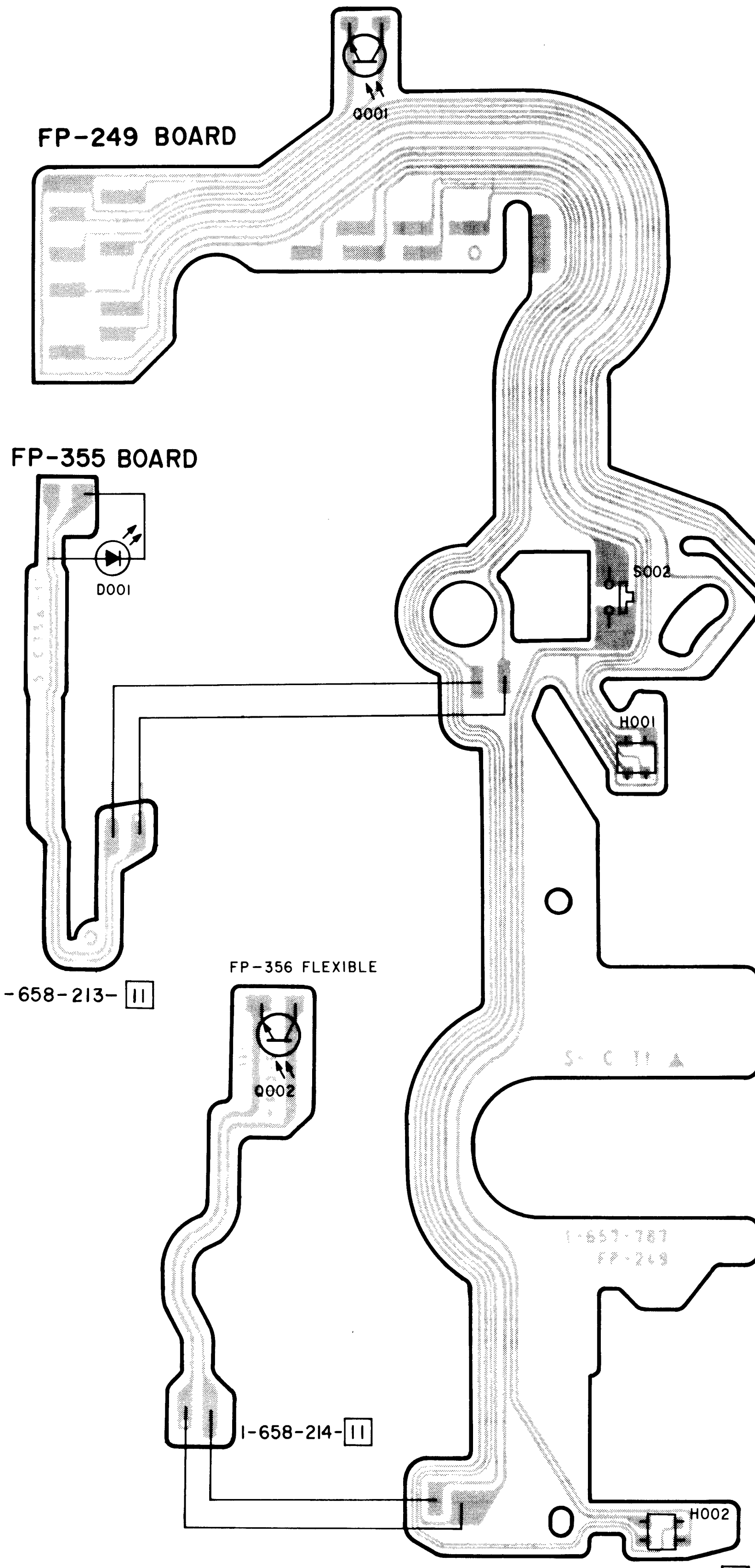
— Ref No. FP-249 FLEXIBLE BOARD: 8,000 series —

## FP-355 (TAPE LED) **FLEXIBLE BOARD**

— Ref No. FP-355 FLEXIBLE BOARD: 8,000 series —

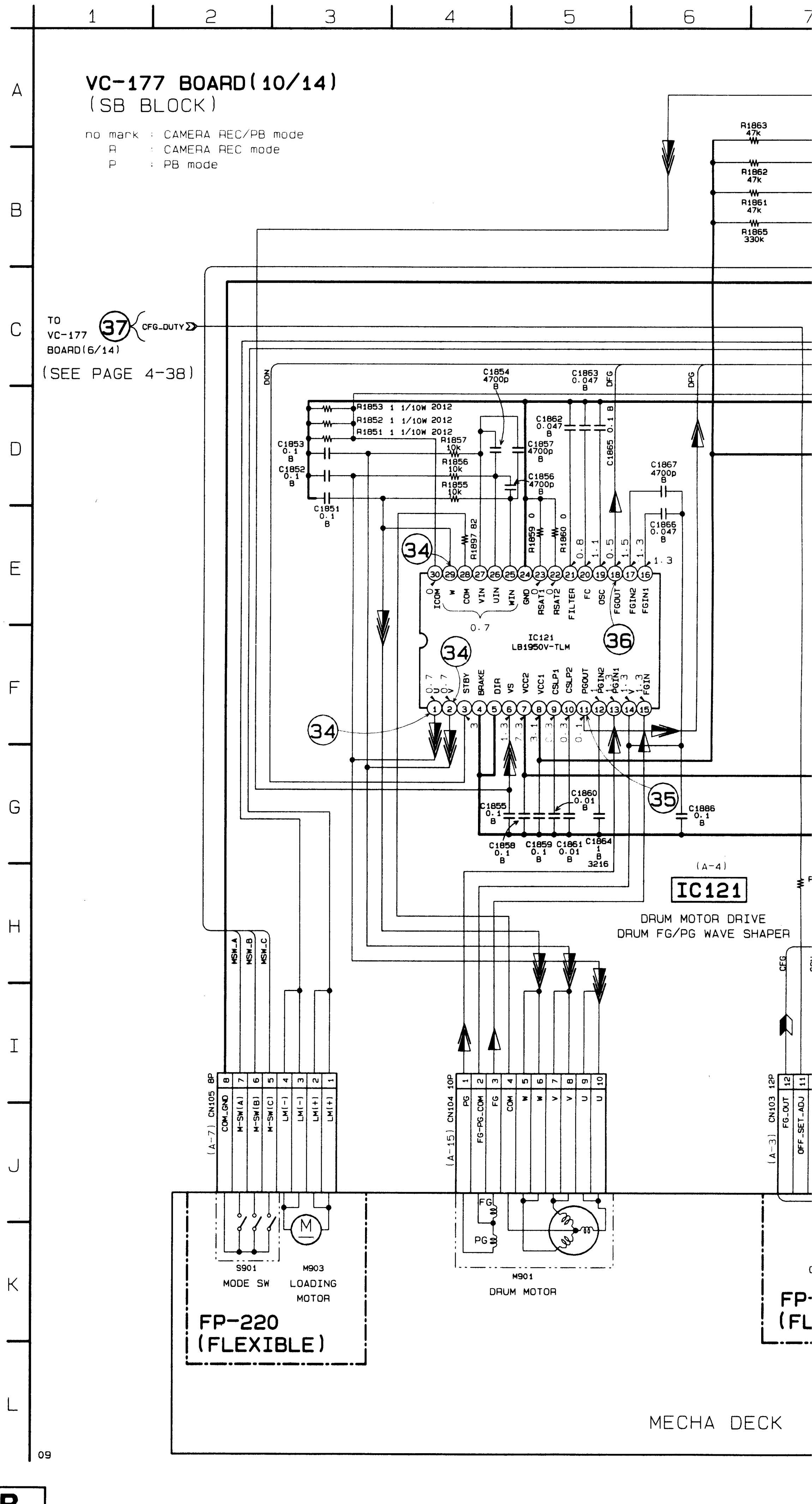
## FP-356 (TAPE END SENSOR) **FLEXIBLE BOARD**

— Ref No. FP-356 FLEXIBLE BOARD: 8,000 series —

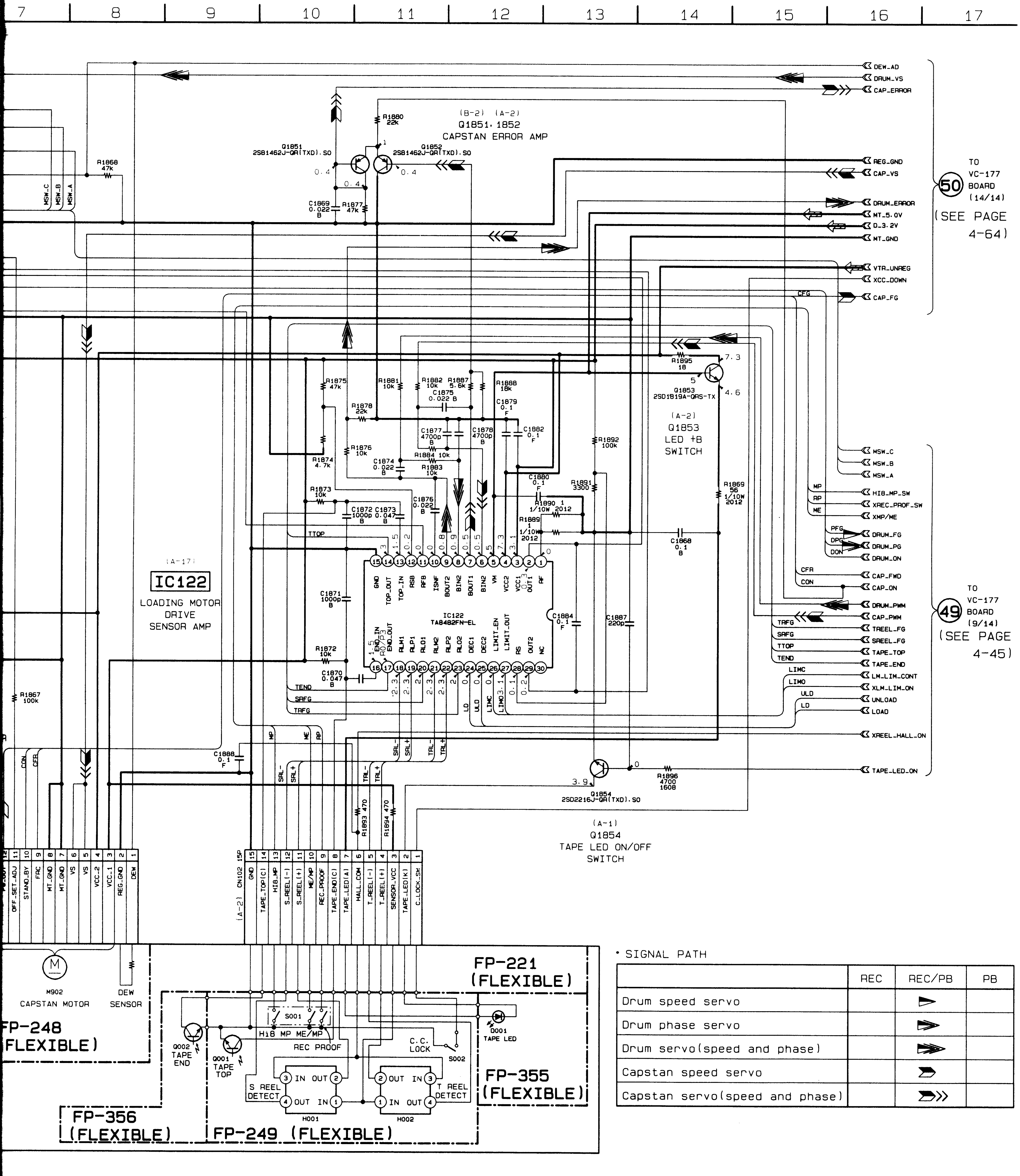

Q001
FP-249 BOARD
FP-355 BOARD
D001
S001
S002
H001
FP-356 FLEXIBLE
Q002
1-658-213-11
1-658-214-11
H002
1-657-787-13

## VC-177 (SERVO), FP-249 (TAPE SENSOR), FP-355 (TAPE LED), FP-356 (TAPE END SENSOR)

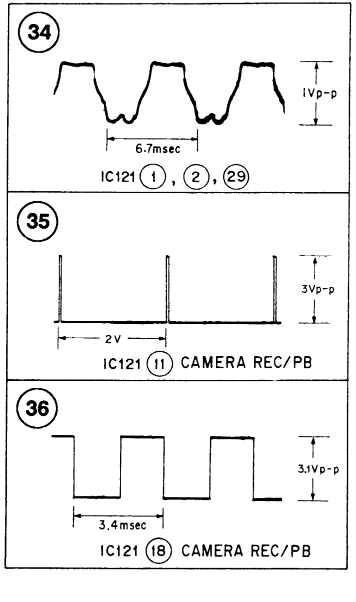
— Ref No. VC-177 BOARD: 10,000 series, FP-249, FP-355 and FP-356 FLEXIBLE BOARDS: 8,000 series —


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
L
VC-177 BOARD(10/14)
(SB BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
TO VC-177 BOARD(6/14)
(SEE PAGE 4-38)
37
CFG_DUTY
R1863 47k
R1862 47k
R1861 47k
R1865 330k
DON
DFG
DPG
C1854 4700p B
C1863 0.047 B
R1853 1 1/10W 2012
R1852 1 1/10W 2012
R1851 1 1/10W 2012
C1862 0.047 B
C1865 0.1 B
C1853 0.1 B
C1852 0.1 B
C1851 0.1 B
R1857 10k
R1856 10k
R1855 10k
C1857 4700p B
C1856 4700p B
C1867 4700p B
C1866 0.047 B
R1897 82
R1859 0
R1860 0
34
35
36
IC121
LB1950V-TLM
ICOM
W
COM
VIN
UIN
WIN
GND
RSAT1
RSAT2
FILTER
FC
OSC
FGOUT
FGIN2
FGIN1
U
V
STBY
BRAKE
DIR
VS
VCC2
VCC1
CSLP1
CSLP2
PGOUT
PGIN2
PGIN1
FGIN
C1855 0.1 B
C1858 0.1 B
C1859 0.1 B
C1860 0.01 B
C1861 0.01 B
C1864 1 B 3216
C1886 0.1 B
(A-4)
IC121
DRUM MOTOR DRIVE
DRUM FG/PG WAVE SHAPER
MSW_A
MSW_B
MSW_C
CFG
(A-7) CN105 8P
COM_GND
M-SW(A)
M-SW(B)
M-SW(C)
LM(-)
LM(-)
LM(+)
LM(+)
(A-15) CN104 10P
PG
FG-PG_COM
FG
COM
W
W
V
V
U
U
(A-3) CN103 12P
FG_OUT
OFF_SET-ADJ
S901
MODE SW
M903
LOADING MOTOR
FP-220
(FLEXIBLE)
PG
FG
M901
DRUM MOTOR
FP-
(FL
MECHA DECK
09

• Refer to page 4–13 for Printed Wiring Board.


7
8
9
10
11
12
13
14
15
16
17
DEW_AD
DRUM_VS
CAP_ERROR
REG_GND
CAP_VS
DRUM_ERROR
MT_5.0V
D_3.2V
MT_GND
VTR_UNREG
XCC_DOWN
CFG
CAP_FG
TO VC-177 BOARD (14/14)
(50)
(SEE PAGE 4-64)
(B-2) (A-2)
Q1851, 1852
CAPSTAN ERROR AMP
Q1851 2SB1462J-QR(TXD).SO
Q1852 2SB1462J-QR(TXD).SO
R1880 22k
R1868 47k
C1869 0.022 B
R1877 47k
MSW_C
MSW_B
MSW_A
R1875 47k
R1881 10k
R1882 10k
R1887 5.6k
C1875 0.022 B
R1888 18k
C1879 0.1 F
R1878 22k
C1877 4700p B
C1878 4700p B
C1882 0.1 F
R1876 10k
R1874 4.7k
C1874 0.022 B
R1884 10k
R1883 10k
R1873 10k
C1872 1000p B
C1873 0.047 B
C1876 0.022 B
C1880 0.1 F
R1890 1 1/10W 2012
R1889 1 1/10W 2012
R1891 3300
R1892 100k
R1895 18
Q1853 2SD1819A-QRS-TX
(A-2)
Q1853
LED +B SWITCH
R1869 56 1/10W 2012
C1868 0.1 B
TTOP
(A-17)
IC122
LOADING MOTOR DRIVE SENSOR AMP
IC122 TA8482FN-EL
GND
TOP_OUT
TOP_IN
RSB
RFB
ISNF
BOUT2
BIN2
BOUT1
BIN2
VM
VCC2
VCC1
OUT1
RF
END_IN
R0/P3
END_OUT
RLM1
RLP1
RLO1
RLM2
RLP2
RLO2
DEC1
DEC2
LIMIT_EN
LIMIT_OUT
RS
OUT2
NC
C1871 1000p B
C1884 0.1 F
C1887 220p
R1872 10k
C1870 0.047 B
TEND
SRFG
TRFG
LD
ULD
LIMC
LIMO
MP
RP
ME
PFG
DPG
DON
CFR
CON
MSW_C
MSW_B
MSW_A
HI8_MP_SW
XREC_PROOF_SW
XMP/ME
DRUM_FG
DRUM_PG
DRUM_ON
CAP_FWD
CAP_ON
DRUM_PWM
CAP_PWM
TREEL_FG
SREEL_FG
TAPE_TOP
TAPE_END
LM_LIM_CONT
XLM_LIM_ON
UNLOAD
LOAD
XREEL_HALL_ON
TAPE_LED_ON
TO VC-177 BOARD (9/14)
(49)
(SEE PAGE 4-45)
R1867 100k
CON
CFR
C1888 0.1 F
SRL-
SRL+
TRL-
TRL+
R1893 470
R1894 470
R1896 4700 1608
Q1854 2SD2216J-QR(TXD).SO
(A-1)
Q1854
TAPE LED ON/OFF SWITCH
OFF_SET_ADJ
STAND_BY
FRC
MT_GND
MT_GND
VS
VS
VCC_2
VCC_1
REG_GND
DEW
(A-2) CN102 15P
GND
TAPE_TOP(C)
HI8_MP
S_REEL(-)
S_REEL(+)
ME/MP
REC_PROOF
TAPE_END(C)
TAPE_LED(A)
HALL_COM
T_REEL(-)
T_REEL(+)
SENSOR_VCC
TAPE_LED(K)
C_LOCK_SW
M
M902
CAPSTAN MOTOR
DEW SENSOR
FP-248 (FLEXIBLE)
FP-221 (FLEXIBLE)
S001
Hi8 MP ME/MP
REC PROOF
C.C. LOCK
S002
D001 TAPE LED
Q002 TAPE END
Q001 TAPE TOP
S REEL DETECT
T REEL DETECT
IN OUT
OUT IN
H001
H002
FP-355 (FLEXIBLE)
FP-356 (FLEXIBLE)
FP-249 (FLEXIBLE)

**VC-177** BOARD (SB BLOCK)



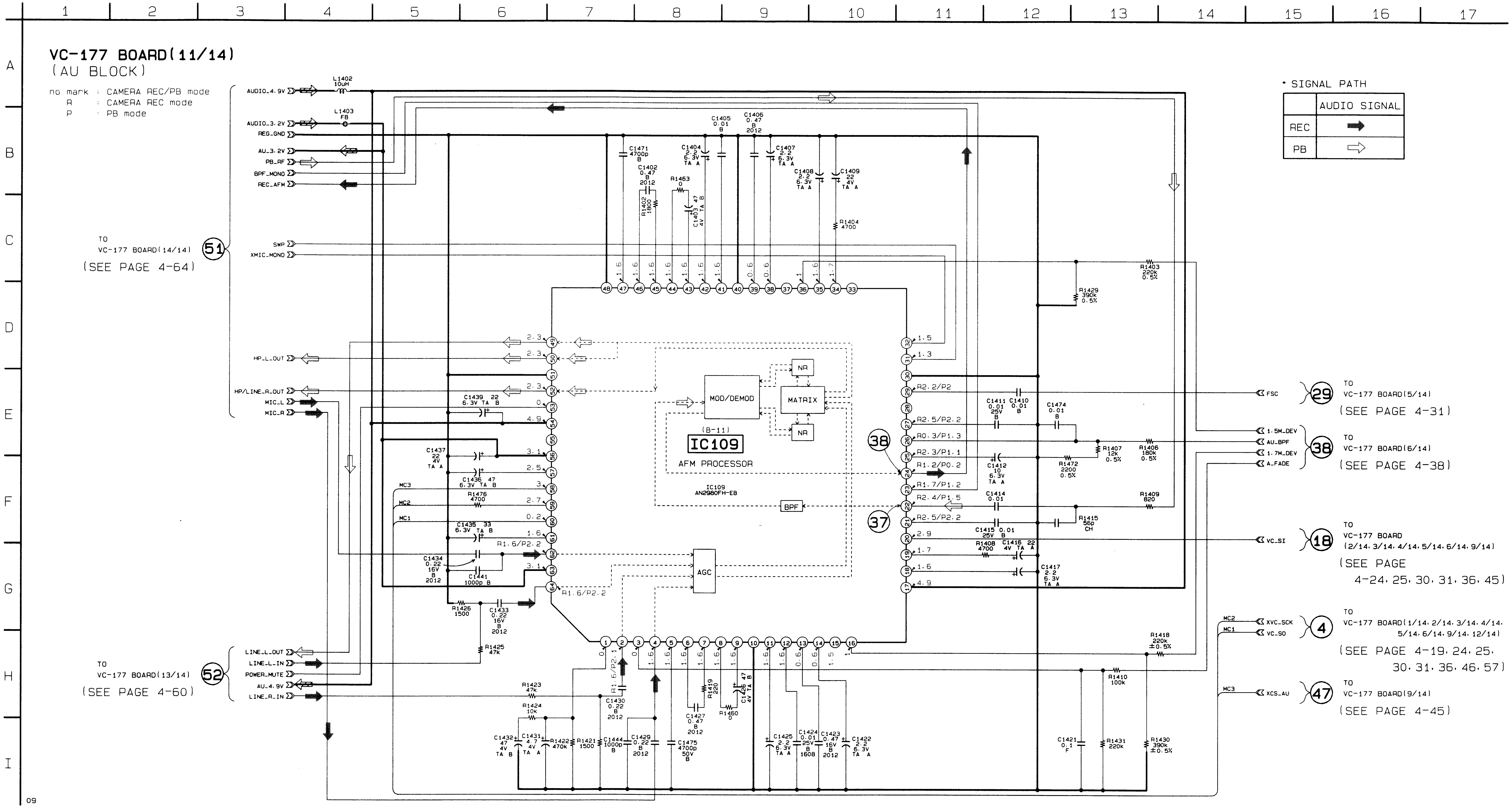
• SIGNAL PATH

| | REC | REC/PB | PB |
|---|---|---|---|
| Drum speed servo | | ➢ | |
| Drum phase servo | | ➢➢ | |
| Drum servo(speed and phase) | | ➢➢➢ | |
| Capstan speed servo | | ➢ | |
| Capstan servo(speed and phase) | | ➢» | |

## VC-177 (AUDIO) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4-13 for Printed Wiring Board.



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14
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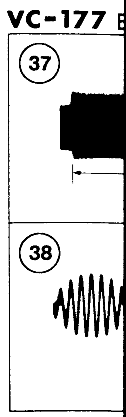
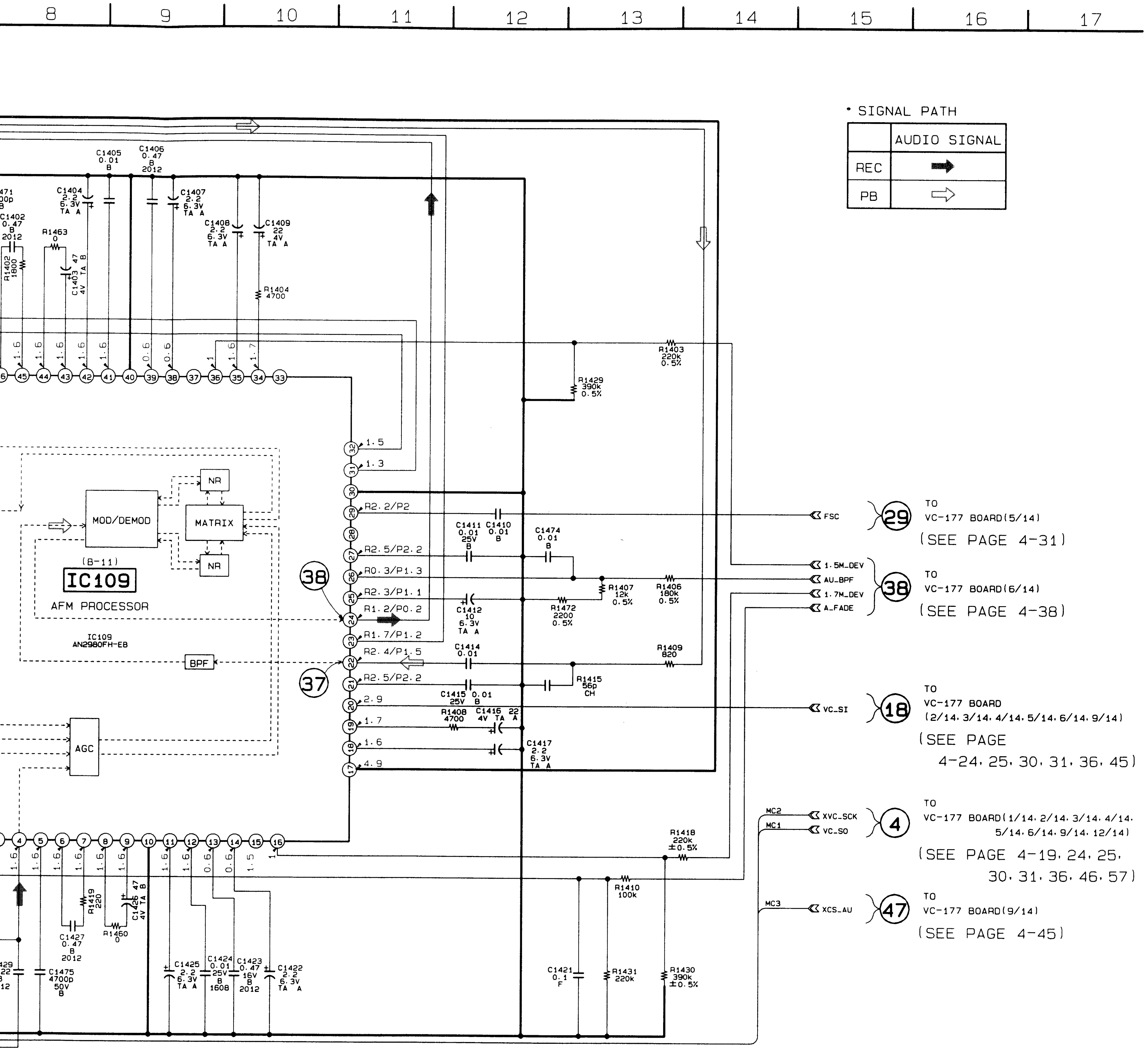
17
A
B
C
D
E
F
G
H
I
VC-177 BOARD(11/14)
(AU BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
• SIGNAL PATH
AUDIO SIGNAL
REC
PB
TO VC-177 BOARD(14/14) (SEE PAGE 4-64)
(51)
AUDIO_4.9V
AUDIO_3.2V
REG_GND
AU_3.2V
PB_RF
BPF_MONO
REC_AFM
SWP
XMIC_MONO
HP_L_OUT
HP/LINE_R_OUT
MIC_L
MIC_R
TO VC-177 BOARD(13/14) (SEE PAGE 4-60)
(52)
LINE_L_OUT
LINE_L_IN
POWER_MUTE
AU_4.9V
LINE_R_IN
L1402 10uH
L1403 FB
C1405 0.01 B
C1406 0.47 B 2012
C1471 4700p B
C1404 2.2 6.3V TA A
C1402 0.47 B 2012
R1463 0
R1402 1800
C1403 47 4V TA B
C1407 2.2 6.3V TA A
C1408 2.2 6.3V TA A
C1409 22 4V TA A
R1404 4700
R1403 220k 0.5%
R1429 390k 0.5%
(B-11)
IC109
AFM PROCESSOR
IC109 AN2960FH-EB
MOD/DEMOD
MATRIX
NR
NR
BPF
AGC
C1439 22 6.3V TA B
C1437 22 4V TA A
C1436 47 6.3V TA B
R1476 4700
C1435 33 6.3V TA B
C1434 0.22 16V B 2012
C1441 1000p B
R1426 1500
C1433 0.22 16V B 2012
R1425 47k
MC3
MC2
MC1
R1.6/P2.2
R1.6/P2.2
R2.2/P2
R2.5/P2.2
R0.3/P1.3
R2.3/P1.1
R1.2/P0.2
R1.7/P1.2
R2.4/P1.5
R2.5/P2.2
C1411 0.01 25V B
C1410 0.01 B
C1474 0.01 B
C1412 10 6.3V TA A
R1472 2200 0.5%
R1407 12k 0.5%
R1406 180k 0.5%
C1414 0.01
R1409 820
C1415 0.01 25V B
R1415 56p CH
R1408 4700
C1416 22 4V TA A
C1417 2.2 6.3V TA A
(38)
(37)
FSC
(29)
TO VC-177 BOARD(5/14) (SEE PAGE 4-31)
1.5M_DEV
AU_BPF
1.7M_DEV
A_FADE
(38)
TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
VC_SI
(18)
TO VC-177 BOARD (2/14, 3/14, 4/14, 5/14, 6/14, 9/14) (SEE PAGE 4-24, 25, 30, 31, 36, 45)
XVC_SCK
VC_SO
(4)
TO VC-177 BOARD(1/14, 2/14, 3/14, 4/14, 5/14, 6/14, 9/14, 12/14) (SEE PAGE 4-19, 24, 25, 30, 31, 36, 46, 57)
XCS_AU
(47)
TO VC-177 BOARD(9/14) (SEE PAGE 4-45)
R1418 220k ±0.5%
R1410 100k
R1423 47k
R1424 10k
C1430 0.22 B 2012
R1419 220
C1426 47 4V TA B
R1460 0
C1427 0.47 B 2012
C1432 47 4V TA B
C1431 4.7 4V TA A
R1422 470k
R1421 1500
C1444 1000p B
C1429 0.22 B 2012
C1475 4700p 50V B
C1425 2.2 6.3V TA A
C1424 0.01 25V B 1608
C1423 0.47 16V B 2012
C1422 2.2 6.3V TA A
C1421 0.1 F
R1431 220k
R1430 390k ±0.5%
09



Wiring Board.


8
9
10
11
12
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14
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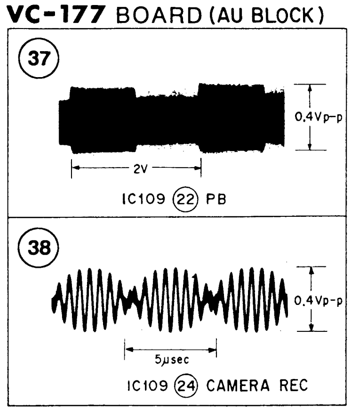
16
17
MOD/DEMOD
MATRIX
NR
NR
(B-11)
IC109
AFM PROCESSOR
IC109
AN2980FH-EB
BPF
AGC
37
38
FSC
1.5M_DEV
AU_BPF
1.7M_DEV
A_FADE
VC_SI
XVC_SCK
VC_SO
XCS_AU
MC1
MC2
MC3
29
TO
VC-177 BOARD(5/14)
(SEE PAGE 4-31)
38
TO
VC-177 BOARD(6/14)
(SEE PAGE 4-38)
18
TO
VC-177 BOARD
(2/14, 3/14, 4/14, 5/14, 6/14, 9/14)
(SEE PAGE
4-24, 25, 30, 31, 36, 45)
4
TO
VC-177 BOARD(1/14, 2/14, 3/14, 4/14,
5/14, 6/14, 9/14, 12/14)
(SEE PAGE 4-19, 24, 25,
30, 31, 36, 46, 57)
47
TO
VC-177 BOARD(9/14)
(SEE PAGE 4-45)
R2.2/P2
R2.5/P2.2
R0.3/P1.3
R2.3/P1.1
R1.2/P0.2
R1.7/P1.2
R2.4/P1.5
R2.5/P2.2
2.9
1.7
1.6
4.9
1.5
1.3
C1405 0.01 B
C1406 0.47 B 2012
C1404 2.2 6.3V TA A
C1407 2.2 6.3V TA A
C1402 0.47 B 2012
R1463 0
R1402 1800
C1403 47 4V TA B
C1408 2.2 6.3V TA A
C1409 22 4V TA A
R1404 4700
R1403 220k 0.5%
R1429 390k 0.5%
C1411 0.01 25V B
C1410 0.01 B
C1474 0.01 B
R1407 12k 0.5%
R1406 180k 0.5%
C1412 10 6.3V TA A
R1472 2200 0.5%
C1414 0.01
R1409 820
R1415 56p CH
C1415 0.01 25V B
R1408 4700
C1416 22 4V TA A
C1417 2.2 6.3V TA A
R1418 220k ±0.5%
R1410 100k
C1421 0.1 F
R1431 220k
R1430 390k ±0.5%
R1419 220
C1427 0.47 B 2012
R1460 0
C1426 47 4V TA B
C1475 4700p 50V B
C1425 2.2 6.3V TA A
C1424 0.01 25V B 1608
C1423 0.47 16V B 2012
C1422 2.2 6.3V TA A

* SIGNAL PATH

|  | AUDIO SIGNAL |
|---|---|
| REC | ➡ |
| PB | ⇨ |

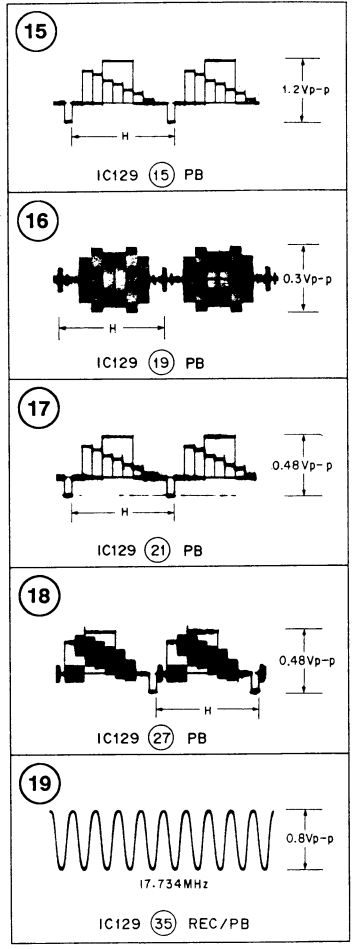

**VC-177** BOARD (AU BLOCK)

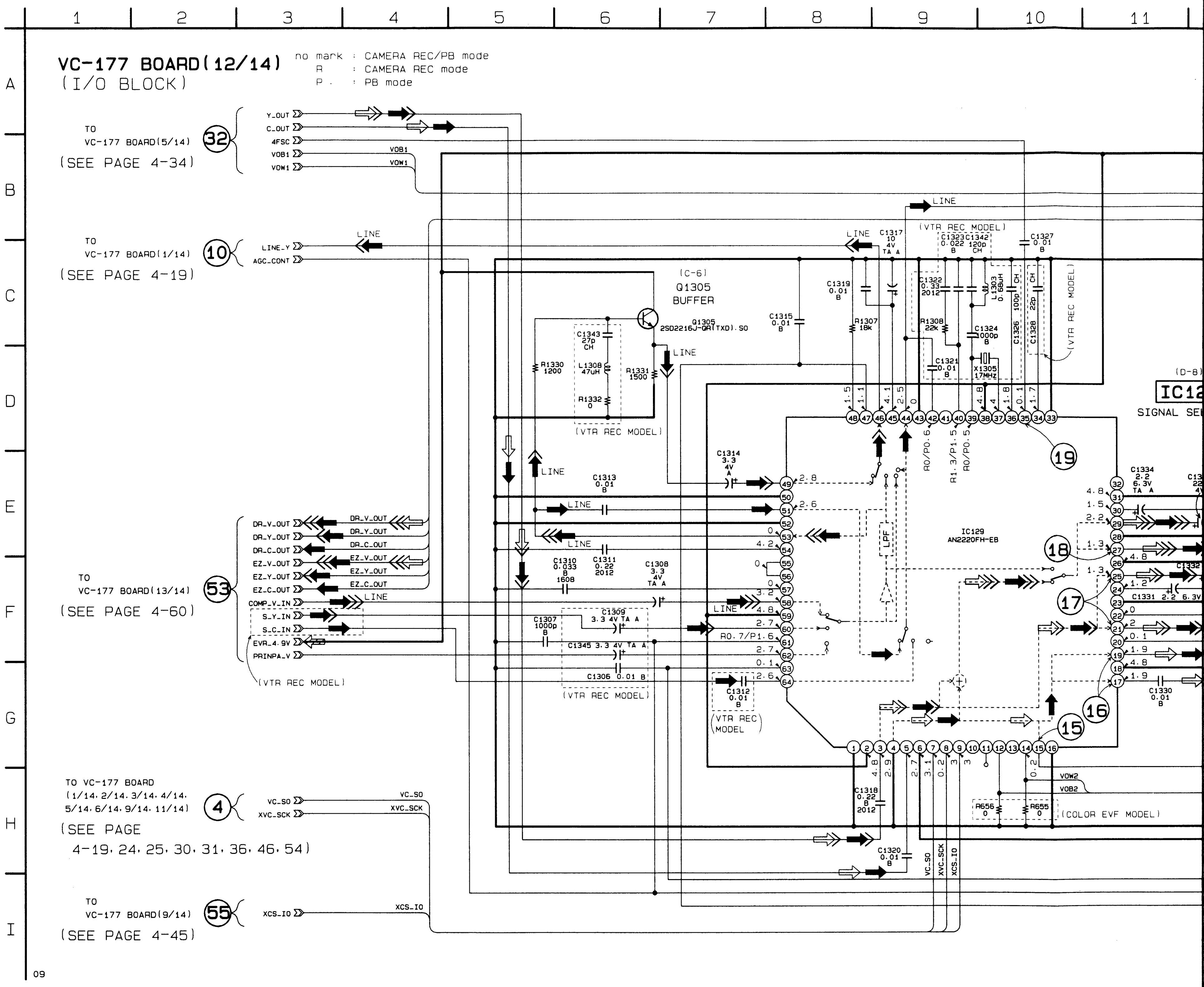
## VC-177 (VIDEO IN/OUT (1)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.

**VC-177** BOARD (IO BLOCK)





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A
B
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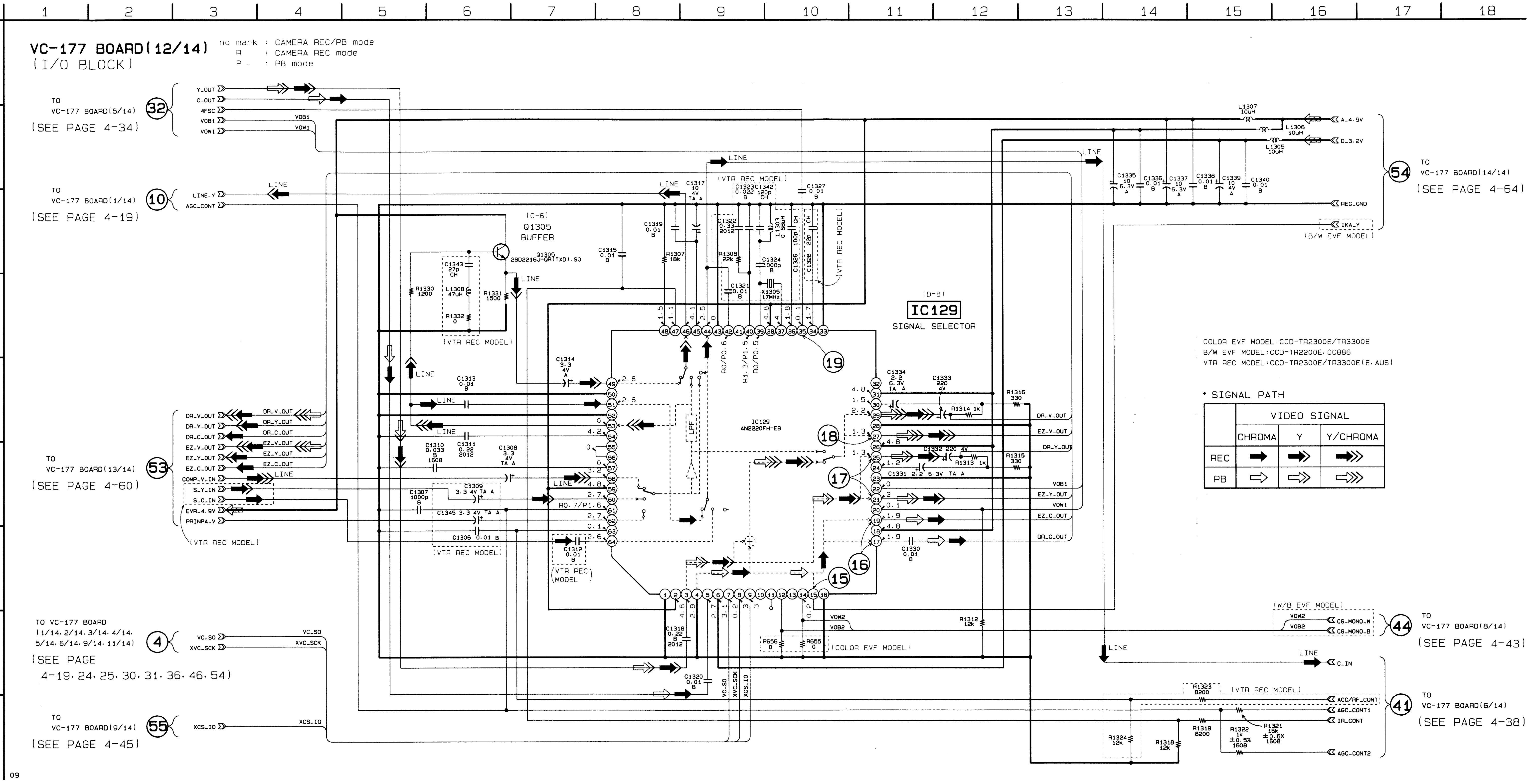
I
VC-177 BOARD (12/14)
(I/O BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
TO VC-177 BOARD (5/14)
(SEE PAGE 4-34)
㉜
Y_OUT
C_OUT
4FSC
VOB1
VOW1
TO VC-177 BOARD (1/14)
(SEE PAGE 4-19)
⑩
LINE_Y
AGC_CONT
LINE
TO VC-177 BOARD (13/14)
(SEE PAGE 4-60)
53
DR_V_OUT
DR_Y_OUT
DR_C_OUT
EZ_V_OUT
EZ_Y_OUT
EZ_C_OUT
COMP_V_IN
S_Y_IN
S_C_IN
EVR_4.9V
PRINPA_V
(VTR REC MODEL)
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 5/14, 6/14, 9/14, 11/14)
(SEE PAGE 4-19, 24, 25, 30, 31, 36, 46, 54)
④
VC_SO
XVC_SCK
TO VC-177 BOARD (9/14)
(SEE PAGE 4-45)
55
XCS_IO
(C-6)
Q1305
BUFFER
Q1305
2SD2216J-QR(TXD).SO
C1343 27p CH
L1308 47uH
R1330 1200
R1331 1500
R1332 0
(VTR REC MODEL)
C1315 0.01 B
C1319 0.01 B
R1307 18k
C1317 10 4V TA A
(VTR REC MODEL)
C1323 0.022 B
C1342 120p CH
C1322 0.33 2012
L1303 0.68uH
C1326 100p CH
C1328 22p CH
C1327 0.01 B
R1308 22k
C1324 1000p B
C1321 0.01 B
X1305 17MHz
(VTR REC MODEL)
C1314 3.3 4V A
C1313 0.01 B
C1310 0.033 B 1608
C1311 0.22 2012
C1308 3.3 4V TA A
C1307 1000p B
C1309 3.3 4V TA A
C1345 3.3 4V TA A
C1306 0.01 B
(VTR REC MODEL)
C1312 0.01 B
(VTR REC MODEL)
LPF
IC129 AN2220FH-EB
R0/P0.6
R1.3/P1.5
R0/P0.5
R0.7/P1.6
C1318 0.22 B 2012
C1320 0.01 B
R656 0
R655 0
(COLOR EVF MODEL)
VOW2
VOB2
VC_SO
XVC_SCK
XCS_IO
C1334 2.2 6.3V TA A
C1331 2.2 6.3V
C1330 0.01 B
(D-8)
IC12
SIGNAL SE
⑮
⑯
⑰
⑱
⑲
09

## VC-177 (VIDEO IN/OUT (1)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.



1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18
VC-177 BOARD(12/14)
(I/O BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
TO VC-177 BOARD(5/14) (SEE PAGE 4-34)
32
Y_OUT
C_OUT
4FSC
VOB1
VOW1
TO VC-177 BOARD(1/14) (SEE PAGE 4-19)
10
LINE_Y
AGC_CONT
LINE
TO VC-177 BOARD(13/14) (SEE PAGE 4-60)
53
DR_V_OUT
DR_Y_OUT
DR_C_OUT
EZ_V_OUT
EZ_Y_OUT
EZ_C_OUT
COMP_V_IN
S_Y_IN
S_C_IN
EVR_4.9V
PRINPA_V
(VTR REC MODEL)
TO VC-177 BOARD (1/14, 2/14, 3/14, 4/14, 5/14, 6/14, 9/14, 11/14)
4
VC_SO
XVC_SCK
(SEE PAGE 4-19, 24, 25, 30, 31, 36, 46, 54)
TO VC-177 BOARD(9/14) (SEE PAGE 4-45)
55
XCS_IO
(C-6)
Q1305
BUFFER
2SD2216J-QR(TX0).SO
C1343 27p CH
L1308 47uH
R1330 1200
R1331 1500
R1332 0
(VTR REC MODEL)
C1315 0.01 B
C1319 0.01 B
R1307 18k
C1317 10 4V TA A
(VTR REC MODEL)
C1323 0.022 B
C1342 120p CH
C1322 0.33 2012
R1308 22k
C1324 1000p B
C1321 0.01 B
X1305 17MHz
L1303 0.56uH
C1326 100p CH
C1328 22p CH
C1327 0.01 B
(VTR REC MODEL)
(D-8)
IC129
SIGNAL SELECTOR
IC129
AN2220FH-EB
LPF
R0/P0.6
R1.3/P1.5
R0/P0.5
C1314 3.3 4V A
C1313 0.01 B
C1310 0.033 B 1608
C1311 0.22 2012
C1308 3.3 4V TA A
C1307 1000p B
C1309 3.3 4V TA A
C1345 3.3 4V TA A
C1306 0.01 B
(VTR REC MODEL)
C1312 0.01 B
(VTR REC MODEL)
R0.7/P1.6
C1318 0.22 B 2012
C1320 0.01 B
VC_SO
XVC_SCK
XCS_IO
R656 0
R655 0
(COLOR EVF MODEL)
VOW2
VOB2
R1312 12k
C1334 2.2 6.3V TA A
C1333 220 4V
R1314 1k
C1332 220 4V
R1313 1k
C1331 2.2 6.3V TA A
C1330 0.01 B
R1316 330
R1315 330
DR_V_OUT
EZ_V_OUT
DR_Y_OUT
VOB1
EZ_Y_OUT
VOW1
EZ_C_OUT
DR_C_OUT
15
16
17
18
19
L1307 10uH
L1306 10uH
L1305 10uH
A_4.9V
D_3.2V
C1335 10 6.3V A
C1336 0.01 B
C1337 10 6.3V A
C1338 0.01 B
C1339 10 4V A
C1340 0.01 B
REG_GND
IKA_Y
(B/W EVF MODEL)
54
TO VC-177 BOARD(14/14) (SEE PAGE 4-64)
COLOR EVF MODEL : CCD-TR2300E/TR3300E
B/W EVF MODEL : CCD-TR2200E, CC886
VTR REC MODEL : CCD-TR2300E/TR3300E(E, AUS)
(W/B EVF MODEL)
CG_MONO_W
CG_MONO_B
44
TO VC-177 BOARD(8/14) (SEE PAGE 4-43)
C_IN
R1323 8200
(VTR REC MODEL)
ACC/RF_CONT
AGC_CONT1
IR_CONT
AGC_CONT2
R1324 12k
R1318 12k
R1319 8200
R1322 1k ±0.5% 1608
R1321 16k ±0.5% 1608
41
TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
09

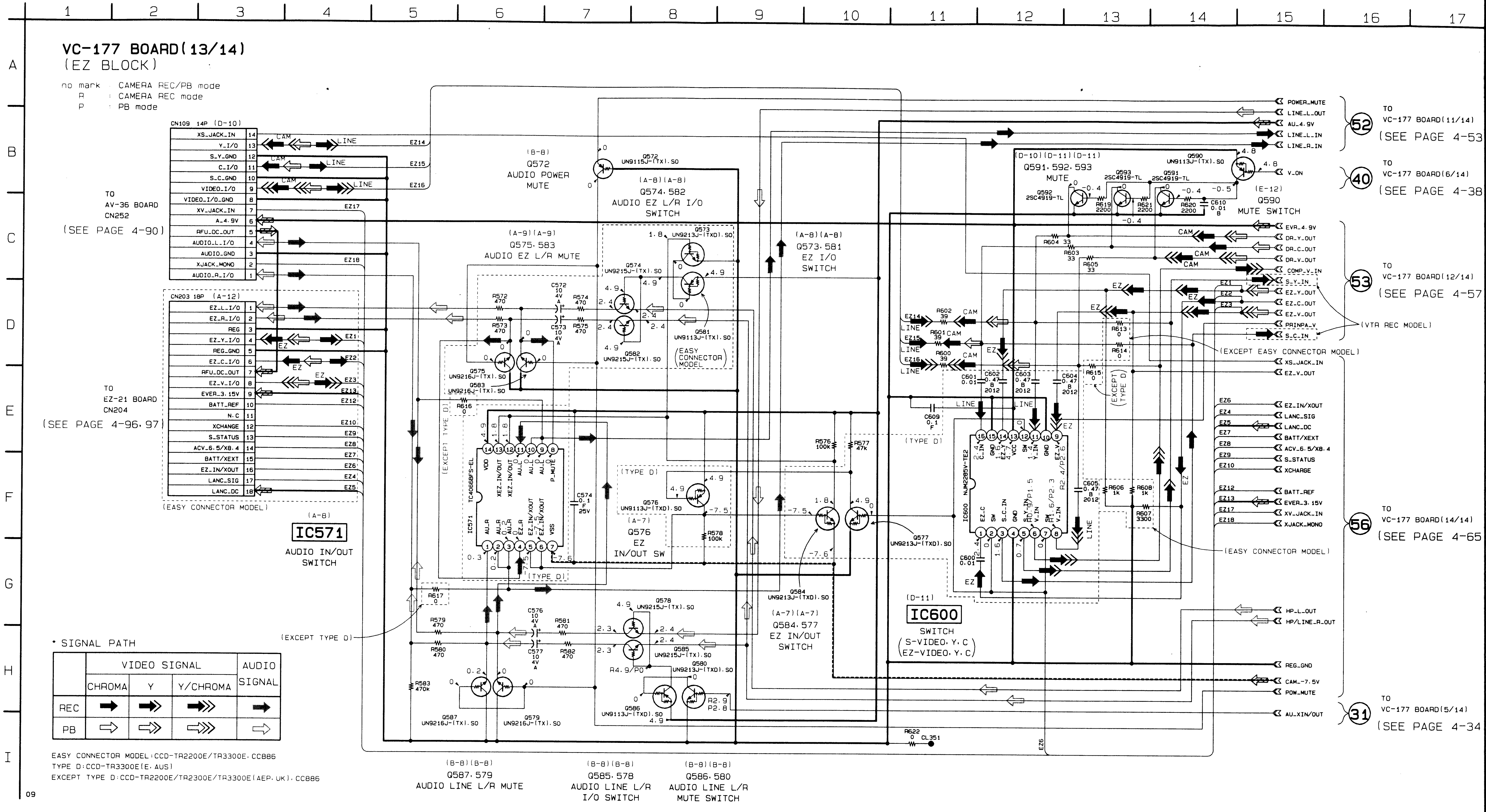
• SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ⇛ | ⇛ |
| PB | ⇨ | ⇨ | ⇨ |

## VC-177 (VIDEO IN/OUT (2)) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4-13 for Printed Wiring Board.



VC-177 BOARD(13/14)
(EZ BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
CN109 14P (D-10)
XS_JACK_IN 14
Y_I/O 13
S_Y_GND 12
C_I/O 11
S_C_GND 10
VIDEO_I/O 9
VIDEO_I/O_GND 8
XV_JACK_IN 7
A_4.9V 6
RFU_DC_OUT 5
AUDIO_L_I/O 4
AUDIO_GND 3
XJACK_MONO 2
AUDIO_R_I/O 1
TO AV-36 BOARD CN252
(SEE PAGE 4-90)
CN203 18P (A-12)
EZ_L_I/O 1
EZ_R_I/O 2
REG 3
EZ_Y_I/O 4
REG_GND 5
EZ_C_I/O 6
RFU_DC_OUT 7
EZ_V_I/O 8
EVER_3.15V 9
BATT_REF 10
N.C 11
XCHANGE 12
S_STATUS 13
ACV_6.5/X8.4 14
BATT/XEXT 15
EZ_IN/XOUT 16
LANC_SIG 17
LANC_DC 18
(EASY CONNECTOR MODEL)
TO EZ-21 BOARD CN204
(SEE PAGE 4-96, 97)
CAM
LINE
EZ
(B-8) Q572 AUDIO POWER MUTE
Q572 UN9115J-(TX).SO
(A-8)(A-8) Q574, 582 AUDIO EZ L/R I/O SWITCH
Q573 UN9213J-(TXD).SO
Q574 UN9215J-(TX).SO
Q581 UN9113J-(TX).SO
Q582 UN9215J-(TX).SO
(EASY CONNECTOR MODEL)
(A-9)(A-9) Q575, 583 AUDIO EZ L/R MUTE
Q575 UN9216J-(TX).SO
Q583 UN9216J-(TX).SO
R572 470
R573 470
R574 470
R575 470
C572 10 4V A
C573 10 4V A
R616 0
(EXCEPT TYPE D)
(A-8)(A-8) Q573, 581 EZ I/O SWITCH
(A-8) IC571 AUDIO IN/OUT SWITCH
IC571 TC4066BFS-EL
VDD
XEZ_IN/OUT
AU_L
AU_R
EZ_IN/XOUT
VSS
P_MUTE
C574 0.1 F 25V
(TYPE D)
Q576 UN9113J-(TXD).SO
(A-7) Q576 EZ IN/OUT SW
R578 100k
R576 100k
R577 47k
Q577 UN9213J-(TXD).SO
Q584 UN9213J-(TXD).SO
(A-7)(A-7) Q584, 577 EZ IN/OUT SWITCH
R617 0
(EXCEPT TYPE D)
R579 470
R580 470
R581 470
R582 470
R583 470k
C576 10 4V A
C577 10 4V A
Q578 UN9215J-(TX).SO
Q585 UN9215J-(TX).SO
Q580 UN9213J-(TXD).SO
Q586 UN9113J-(TXD).SO
Q587 UN9216J-(TX).SO
Q579 UN9216J-(TX).SO
(B-8)(B-8) Q587, 579 AUDIO LINE L/R MUTE
(B-8)(B-8) Q585, 578 AUDIO LINE L/R I/O SWITCH
(B-8)(B-8) Q586, 580 AUDIO LINE L/R MUTE SWITCH
(D-10)(D-11)(D-11) Q591, 592, 593 MUTE
Q592 2SC4919-TL
Q593 2SC4919-TL
Q591 2SC4919-TL
Q590 UN9113J-(TX).SO
(E-12) Q590 MUTE SWITCH
R619 2200
R621 2200
R620 2200
C610 0.01 B
R604 33
R603 33
R605 33
R602 39
R601 39
R600 39
C601 0.01
C602 0.47 B 2012
C603 0.47 B 2012
C604 0.47 B 2012
C605 0.47 B 2012
C609 0.1 F
C600 0.01
R606 1k
R608 1k
R607 3300
R613 0
R614 0
R615 0
(EXCEPT TYPE D)
(TYPE D)
IC600 NJM2285V-TE2
(D-11) IC600 SWITCH (S-VIDEO, Y, C) (EZ-VIDEO, Y, C)
EZ-C
SW
S_C_IN
GND
V_IN
C_IN
VCC
Y_IN
EZ-V
R622 0 CL351
POWER_MUTE
LINE_L_OUT
AU_4.9V
LINE_L_IN
LINE_R_IN
TO VC-177 BOARD(11/14) (SEE PAGE 4-53)
52
V_ON
TO VC-177 BOARD(6/14) (SEE PAGE 4-38)
40
EVR_4.9V
DR_Y_OUT
DR_C_OUT
DR_V_OUT
COMP_V_IN
S_Y_IN
EZ_Y_OUT
EZ_C_OUT
EZ_V_OUT
PRINPA_V
S_C_IN
TO VC-177 BOARD(12/14) (SEE PAGE 4-57)
53
(VTR REC MODEL)
(EXCEPT EASY CONNECTOR MODEL)
XS_JACK_IN
EZ_V_OUT
EZ_IN/XOUT
LANC_SIG
LANC_DC
BATT/XEXT
ACV_6.5/X8.4
S_STATUS
XCHANGE
BATT_REF
EVER_3.15V
XV_JACK_IN
XJACK_MONO
TO VC-177 BOARD(14/14) (SEE PAGE 4-65)
56
(EASY CONNECTOR MODEL)
HP_L_OUT
HP/LINE_R_OUT
REG_GND
CAM_-7.5V
POW_MUTE
AU_XIN/OUT
TO VC-177 BOARD(5/14) (SEE PAGE 4-34)
31

- SIGNAL PATH

| | VIDEO SIGNAL | | | AUDIO SIGNAL |
|---|---|---|---|---|
| | CHROMA | Y | Y/CHROMA | |
| REC | ➡ | ➡》 | ➡》》 | ➡ |
| PB | ⇨ | ⇨》 | ⇨》》 | ⇨ |

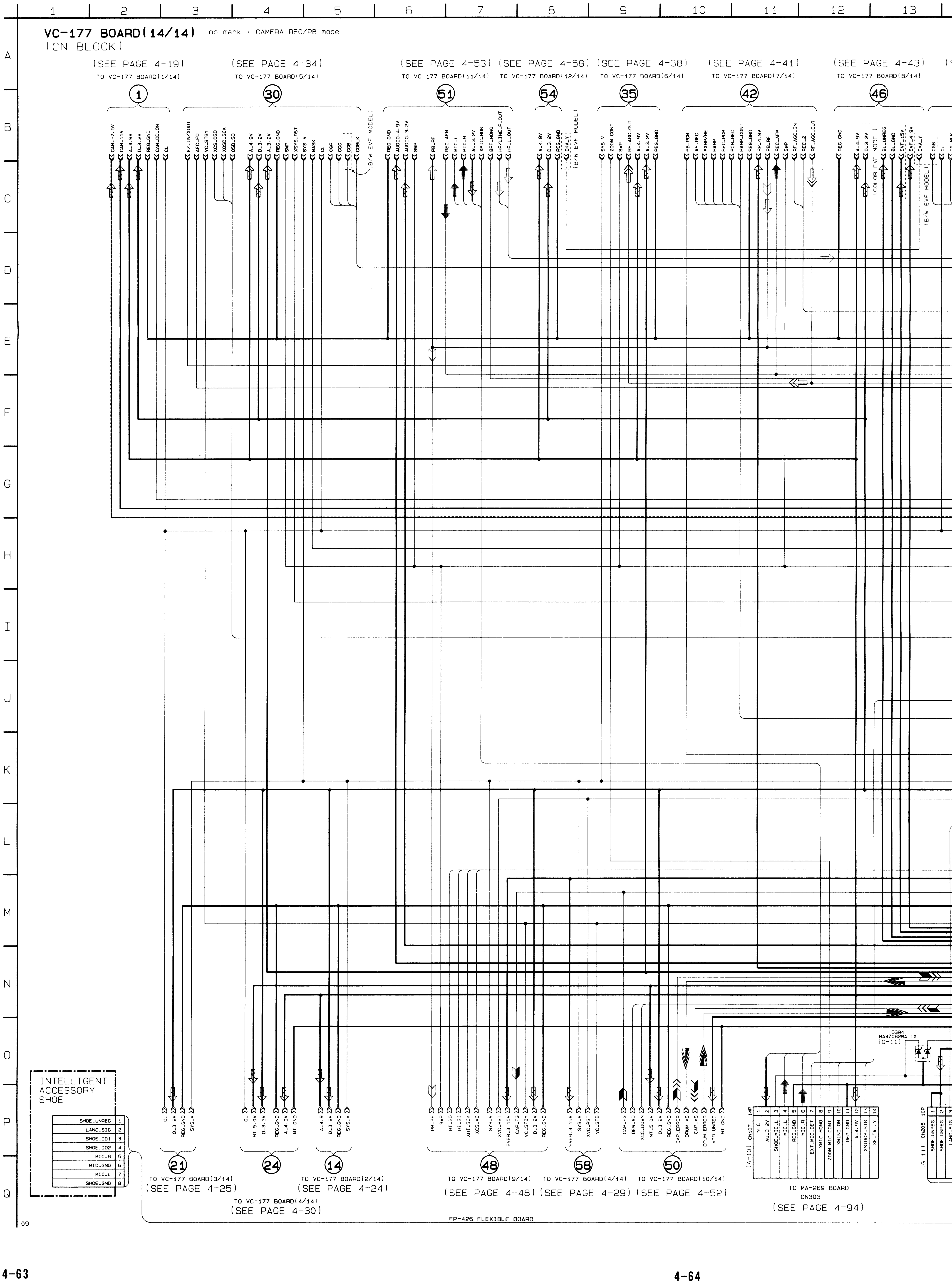
EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E, CC886
TYPE D:CCD-TR3300E(E, AUS)
EXCEPT TYPE D:CCD-TR2200E/TR2300E/TR3300E(AEP, UK), CC886

09

## VC-177 (CONNECTOR) SCHEMATIC DIAGRAM

— Ref No. VC-177 BOARD: 10,000 series —

- Refer to page 4–13 for Printed Wiring Board.


1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
VC-177 BOARD(14/14)
(CN BLOCK)
no mark : CAMERA REC/PB mode
(SEE PAGE 4-19)
TO VC-177 BOARD(1/14)
①
CAM_-7.5V
CAM_15V
A_4.9V
D_3.2V
REG_GND
CAM_DD_ON
CL
(SEE PAGE 4-34)
TO VC-177 BOARD(5/14)
(30)
EZ_IN/XOUT
AFC_FO
VC_STBY
XCS_OSD
XOSD_SCK
OSD_SO
A_4.9V
D_3.2V
A_3.2V
REG_GND
SWP
XSYS_RST
SYS_V
MASK
CL
CGR
CGG
CGB
CGBLK
(B/W EVF MODEL)
(SEE PAGE 4-53)
TO VC-177 BOARD(11/14)
(51)
REG_GND
AUDIO_4.9V
AUDIO_3.2V
SWP
PB_RF
REC_AFM
MIC_L
MIC_R
AU_3.2V
XMIC_MON
BPF_MONO
HP/LINE_R_OUT
HP_L_OUT
(SEE PAGE 4-58)
TO VC-177 BOARD(12/14)
(54)
A_4.9V
D_3.2V
REG_GND
IKA_Y
(B/W EVF MODEL)
(SEE PAGE 4-38)
TO VC-177 BOARD(6/14)
(35)
SYS_V
ZOOM_CONT
SWP
RF_AGC_OUT
A_4.9V
A_3.2V
REG_GND
(SEE PAGE 4-41)
TO VC-177 BOARD(7/14)
(42)
PB_PCM
AF_REC
*XMP/ME
RAMP
REC_PCM
PCM_REC
RAMP_CONT
REG_GND
RP_4.9V
PB_RF
REC_AFM
SWP
RF_AGC_IN
REC_2
RF_AGC_OUT
(SEE PAGE 4-43)
TO VC-177 BOARD(8/14)
(46)
REG_GND
A_4.9V
D_3.2V
(COLOR EVF MODEL)
BL_UNREG
BL_GND
EVF_15V
EVF_4.9V
IKA_Y
CGB
CL
(B/W EVF MODEL)
INTELLIGENT
ACCESSORY
SHOE
SHOE_UNREG 1
LANC_SIG 2
SHOE_ID1 3
SHOE_ID2 4
MIC_R 5
MIC_GND 6
MIC_L 7
SHOE_GND 8
CL
D_3.2V
REG_GND
SYS_V
(21)
TO VC-177 BOARD(3/14)
(SEE PAGE 4-25)
CL
MT_5.0V
D_3.2V
REG_GND
A_4.9V
MT_GND
(24)
TO VC-177 BOARD(4/14)
(SEE PAGE 4-30)
A_4.9
D_3.2V
REG_GND
SYS_V
(14)
TO VC-177 BOARD(2/14)
(SEE PAGE 4-24)
PB_RF
SWP
HI_SO
HI_SI
XHI_SCK
XCS_VC
SYS_V
XVC_RST
EVER_3.15V
CAP_FG
VC_STBY
D_3.2V
REG_GND
(48)
TO VC-177 BOARD(9/14)
(SEE PAGE 4-48)
EVER_3.15V
SYS_V
XVC_RST
VC_STB
(58)
TO VC-177 BOARD(4/14)
(SEE PAGE 4-29)
CAP_FG
DEW_AD
XCC_DOWN
MT_5.0V
D_3.2V
REG_GND
CAP_ERROR
DRUM_VS
CAP_VS
DRUM_ERROR
VTR_UNREG
MT_GND
(50)
TO VC-177 BOARD(10/14)
(SEE PAGE 4-52)
FP-426 FLEXIBLE BOARD
(A-10) CN107 14P
1 N.C.
2 AU_3.2V
3 SHOE_MIC_L
4 MIC_L
5 REG_GND
6 MIC_R
7 EXT_MIC_DET
8 XMIC_MONO
9 ZOOM_MIC_CONT
10 XWIND_ON
11 REG_GND
12 A_4.9V
13 XSIRCS_SIG
14 XF_TALLY
TO MA-269 BOARD
CN303
(SEE PAGE 4-94)
D394
MA4Z082WA-TX
(G-11)
(G-11) CN205 10P
1 SHOE_UNREG
2 SHOE_UNREG
09

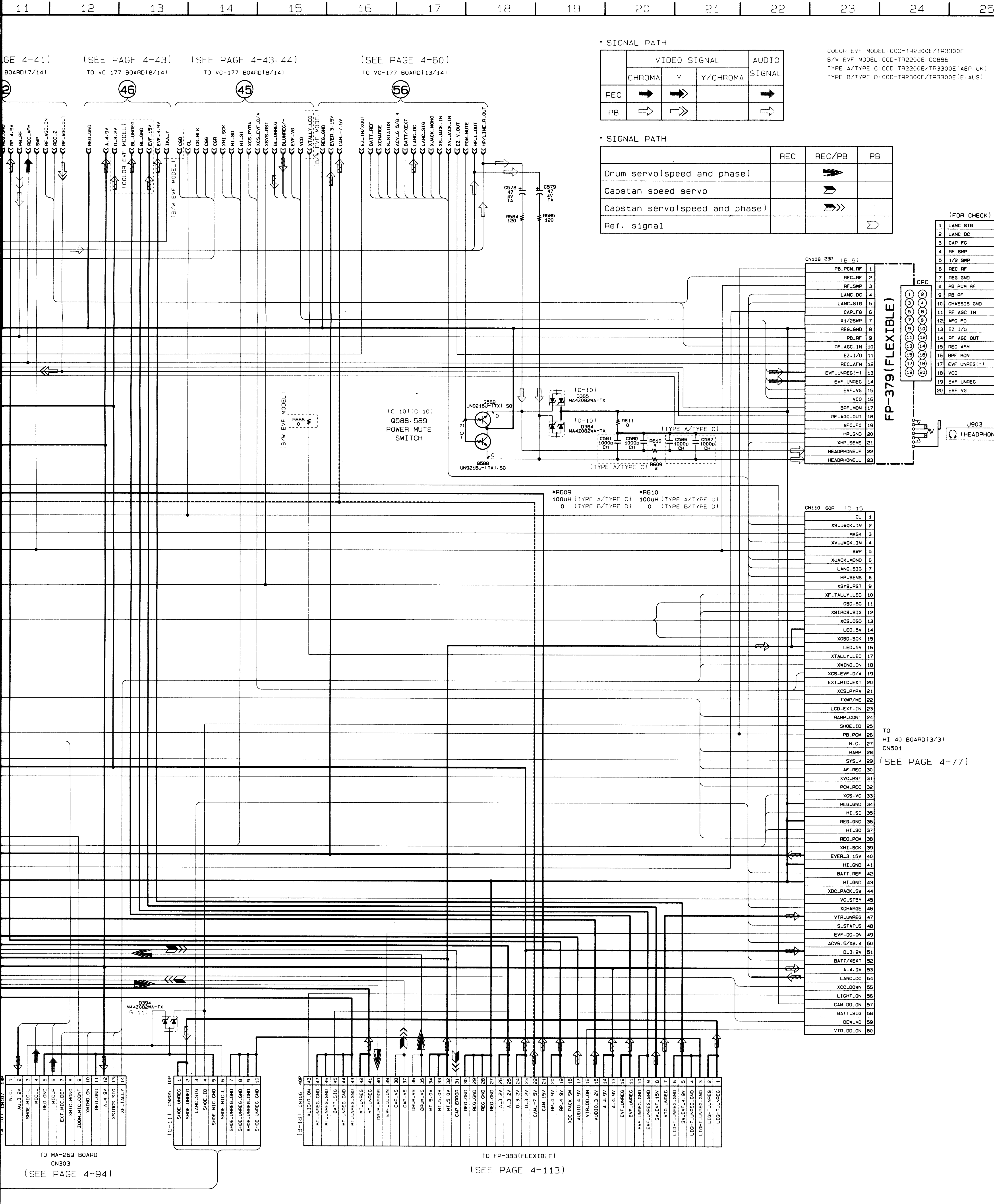
COLOR EVF MODEL:CCD-TR2300E/TR3300E
B/W EVF MODEL:CCD-TR2200E, CC886
TYPE A/TYPE C:CCD-TR2200E/TR3300E(AEP, UK)
TYPE B/TYPE D:CCD-TR2300E/TR3300E(E, AUS)

• SIGNAL PATH

|  | VIDEO SIGNAL |  |  | AUDIO SIGNAL |
|---|---|---|---|---|
|  | CHROMA | Y | Y/CHROMA |  |
| REC | ➡ | ⇛ |  | ➡ |
| PB | ⇨ | ⇛ |  | ⇨ |

• SIGNAL PATH

|  | REC | REC/PB | PB |
|---|---|---|---|
| Drum servo(speed and phase) |  | ➤ |  |
| Capstan speed servo |  | ➤ |  |
| Capstan servo(speed and phase) |  | ➤» |  |
| Ref. signal |  |  | ▷ |



11
12
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14
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16
17
18
19
20
21
22
23
24
25
(SEE PAGE 4-41)
BOARD(7/14)
(SEE PAGE 4-43)
TO VC-177 BOARD(8/14)
46
(SEE PAGE 4-43, 44)
TO VC-177 BOARD(8/14)
45
(SEE PAGE 4-60)
TO VC-177 BOARD(13/14)
56
(COLOR EVF MODEL)
(B/W EVF MODEL)
C578 47 4V TA
C579 47 4V TA
R584 120
R585 120
R668 0
(C-10)(C-10)
Q588, 589
POWER MUTE SWITCH
Q589 UN9216J-(TX).SO
Q588 UN9216J-(TX).SO
(C-10) D385 MA4Z082WA-TX
(C-10) D384 MA4Z082WA-TX
R611 0
C581 1000p CH
C580 1000p CH
R610 *
C586 1000p CH
C587 1000p CH
R609 *
(TYPE A/TYPE C)
*R609 100uH (TYPE A/TYPE C) 0 (TYPE B/TYPE D)
*R610 100uH (TYPE A/TYPE C) 0 (TYPE B/TYPE D)
CN108 23P (B-9)
1 PB_PCM_RF
2 REC_RF
3 RF_SWP
4 LANC_DC
5 LANC_SIG
6 CAP_FG
7 X1/2SWP
8 REG_GND
9 PB_RF
10 RF_AGC_IN
11 EZ_I/O
12 REC_AFM
13 EVF_UNREG(-)
14 EVF_UNREG
15 EVF_VG
16 VCO
17 BPF_MON
18 RF_AGC_OUT
19 AFC_FO
20 HP_GND
21 XHP_SENS
22 HEADPHONE_R
23 HEADPHONE_L
FP-379(FLEXIBLE)
CPC
(FOR CHECK)
1 LANC SIG
2 LANC DC
3 CAP FG
4 RF SWP
5 1/2 SWP
6 REC RF
7 REG GND
8 PB PCM RF
9 PB RF
10 CHASSIS GND
11 RF AGC IN
12 AFC FO
13 EZ I/O
14 RF AGC OUT
15 REC AFM
16 BPF MON
17 EVF UNREG(-)
18 VCO
19 EVF UNREG
20 EVF VG
J903
(HEADPHON
CN110 60P (C-15)
1 CL
2 XS_JACK_IN
3 MASK
4 XV_JACK_IN
5 SWP
6 XJACK_MONO
7 LANC_SIG
8 HP_SENS
9 XSYS_RST
10 XF_TALLY_LED
11 OSD_SO
12 XSIRCS_SIG
13 XCS_OSD
14 LED_5V
15 XOSD_SCK
16 LED_5V
17 XTALLY_LED
18 XWIND_ON
19 XCS_EVF_D/A
20 EXT_MIC_EXT
21 XCS_PYRA
22 *XMP/ME
23 LCD_EXT_IN
24 RAMP_CONT
25 SHOE_ID
26 PB_PCM
27 N.C.
28 RAMP
29 SYS_V
30 AF_REC
31 XVC_RST
32 PCM_REC
33 XCS_VC
34 REG_GND
35 HI_SI
36 REG_GND
37 HI_SO
38 REC_PCM
39 XHI_SCK
40 EVER_3.15V
41 HI_GND
42 BATT_REF
43 HI_GND
44 XDC_PACK_SW
45 VC_STBY
46 XCHARGE
47 VTR_UNREG
48 S_STATUS
49 EVF_DD_ON
50 ACV6.5/X8.4
51 D_3.2V
52 BATT/XEXT
53 A_4.9V
54 LANC_DC
55 XCC_DOWN
56 LIGHT_ON
57 CAM_DD_ON
58 BATT_SIG
59 DEW_AD
60 VTR_DD_ON
TO HI-40 BOARD(3/3) CN501
(SEE PAGE 4-77)
D394 MA4Z082WA-TX (G-11)
CN107
CN205 10P (G-11)
CN106 48P (B-18)
TO MA-269 BOARD CN303
(SEE PAGE 4-94)
TO FP-383(FLEXIBLE)
(SEE PAGE 4-113)

20 21 22 23 24 25

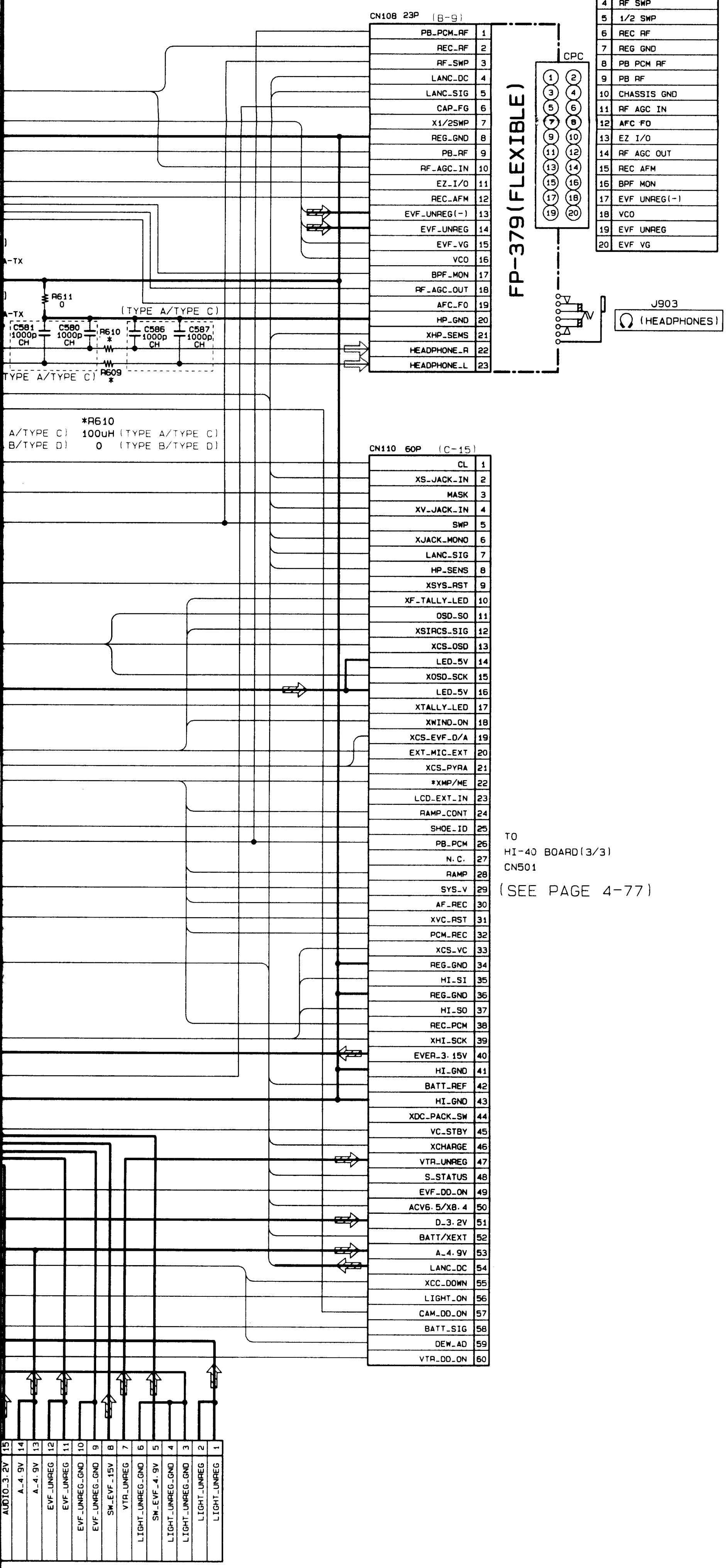
• SIGNAL PATH

|  | VIDEO SIGNAL |  |  | AUDIO SIGNAL |
|---|---|---|---|---|
|  | CHROMA | Y | Y/CHROMA |  |
| REC | ➡ | ➡» |  | ➡ |
| PB | ⇨ | ⇨» |  | ⇨ |

COLOR EVF MODEL:CCD-TR2300E/TR3300E
B/W EVF MODEL:CCD-TR2200E, CC886
TYPE A/TYPE C:CCD-TR2200E/TR3300E(AEP, UK)
TYPE B/TYPE D:CCD-TR2300E/TR3300E(E, AUS)

• SIGNAL PATH

|  | REC | REC/PB | PB |
|---|---|---|---|
| Drum servo(speed and phase) |  | ➤» |  |
| Capstan speed servo |  | ➤ |  |
| Capstan servo(speed and phase) |  | ➤» |  |
| Ref. signal |  |  | ⇨ |


CN108 23P (B-9)
PB_PCM_RF 1
REC_RF 2
RF_SWP 3
LANC_DC 4
LANC_SIG 5
CAP_FG 6
X1/2SWP 7
REG_GND 8
PB_RF 9
RF_AGC_IN 10
EZ_I/O 11
REC_AFM 12
EVF_UNREG(-) 13
EVF_UNREG 14
EVF_VG 15
VCO 16
BPF_MON 17
RF_AGC_OUT 18
AFC_FO 19
HP_GND 20
XHP_SEMS 21
HEADPHONE_R 22
HEADPHONE_L 23
FP-379(FLEXIBLE)
CPC
J903
(HEADPHONES)
A-TX
A-TX
R611
0
(TYPE A/TYPE C)
C581 1000p CH
C580 1000p CH
R610 *
C586 1000p CH
C587 1000p CH
TYPE A/TYPE C)
R609 *
*R610
A/TYPE C) 100uH (TYPE A/TYPE C)
B/TYPE D) 0 (TYPE B/TYPE D)
CN110 60P (C-15)
CL 1
XS_JACK_IN 2
MASK 3
XV_JACK_IN 4
SWP 5
XJACK_MONO 6
LANC_SIG 7
HP_SENS 8
XSYS_RST 9
XF_TALLY_LED 10
OSD_SO 11
XSIRCS_SIG 12
XCS_OSD 13
LED_5V 14
XOSD_SCK 15
LED_5V 16
XTALLY_LED 17
XWIND_ON 18
XCS_EVF_D/A 19
EXT_MIC_EXT 20
XCS_PYRA 21
*XMP/ME 22
LCD_EXT_IN 23
RAMP_CONT 24
SHOE_ID 25
PB_PCM 26
N.C. 27
RAMP 28
SYS_V 29
AF_REC 30
XVC_RST 31
PCM_REC 32
XCS_VC 33
REG_GND 34
HI_SI 35
REG_GND 36
HI_SO 37
REC_PCM 38
XHI_SCK 39
EVER_3.15V 40
HI_GND 41
BATT_REF 42
HI_GND 43
XDC_PACK_SW 44
VC_STBY 45
XCHARGE 46
VTR_UNREG 47
S_STATUS 48
EVF_DD_ON 49
ACV6.5/X8.4 50
D_3.2V 51
BATT/XEXT 52
A_4.9V 53
LANC_DC 54
XCC_DOWN 55
LIGHT_ON 56
CAM_DD_ON 57
BATT_SIG 58
DEW_AD 59
VTR_DD_ON 60
15 AUDIO_3.2V
14 A_4.9V
13 A_4.9V
12 EVF_UNREG
11 EVF_UNREG
10 EVF_UNREG_GND
9 EVF_UNREG_GND
8 SW_EVF_15V
7 VTR_UNREG
6 LIGHT_UNREG_GND
5 SW_EVF_4.9V
4 LIGHT_UNREG_GND
3 LIGHT_UNREG_GND
2 LIGHT_UNREG
1 LIGHT_UNREG

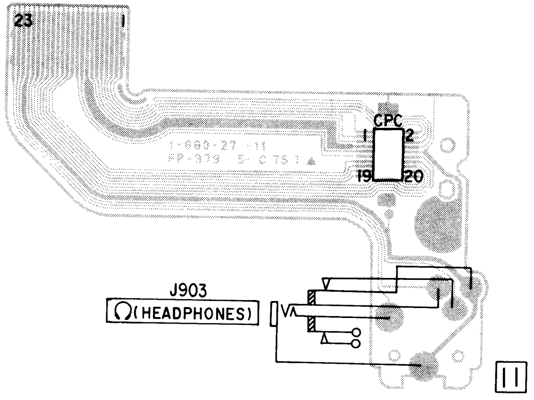
(FOR CHECK)

|  |  |
|---|---|
| 1 | LANC SIG |
| 2 | LANC DC |
| 3 | CAP FG |
| 4 | RF SWP |
| 5 | 1/2 SWP |
| 6 | REC RF |
| 7 | REG GND |
| 8 | PB PCM RF |
| 9 | PB RF |
| 10 | CHASSIS GND |
| 11 | RF AGC IN |
| 12 | AFC FO |
| 13 | EZ I/O |
| 14 | RF AGC OUT |
| 15 | REC AFM |
| 16 | BPF MON |
| 17 | EVF UNREG(-) |
| 18 | VCO |
| 19 | EVF UNREG |
| 20 | EVF VG |

TO
HI-40 BOARD(3/3)
CN501
(SEE PAGE 4-77)

## FP-379 (HEADPHONES) FLEXIBLE BOARD

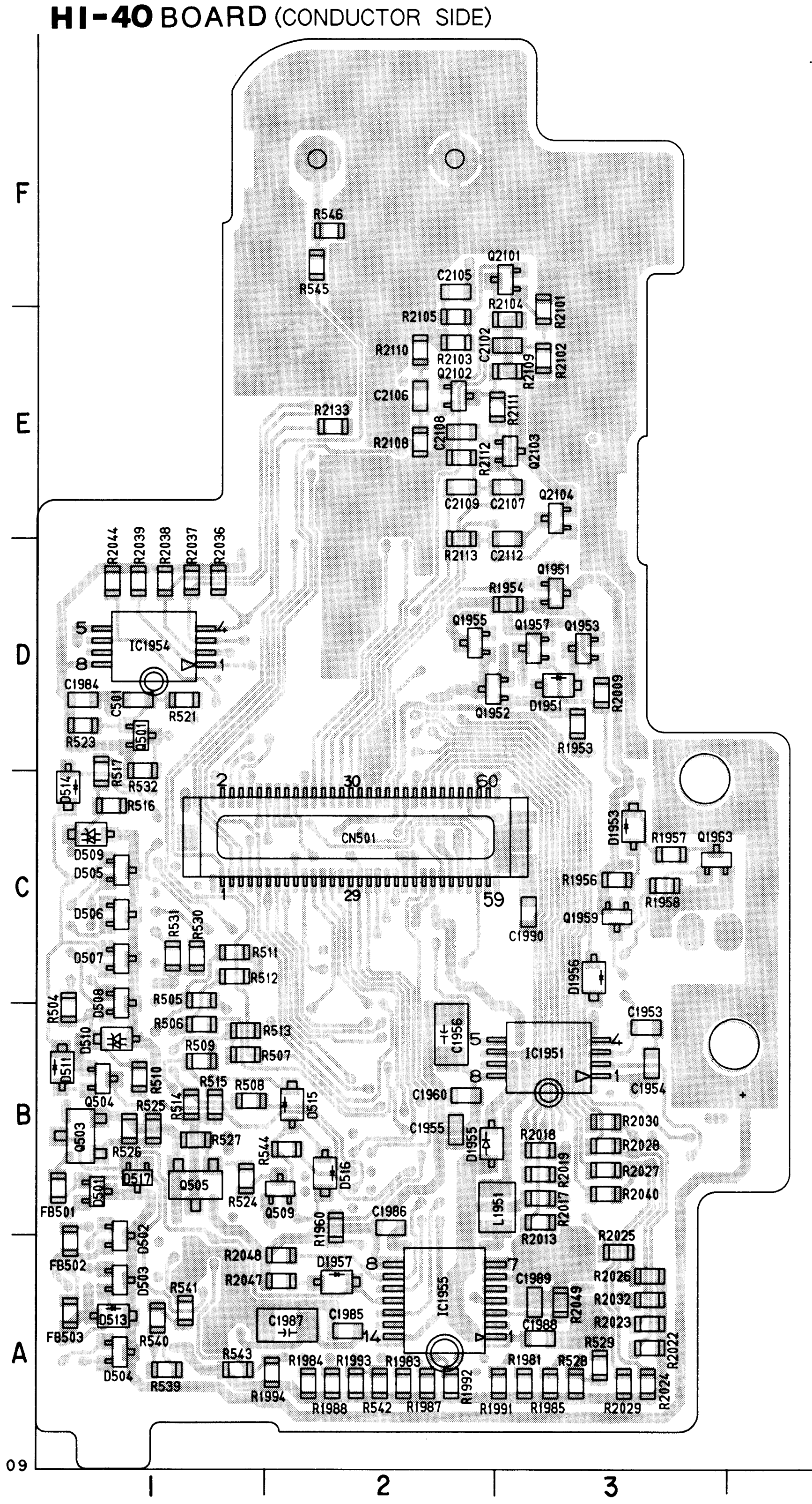
**FP-379** BOARD

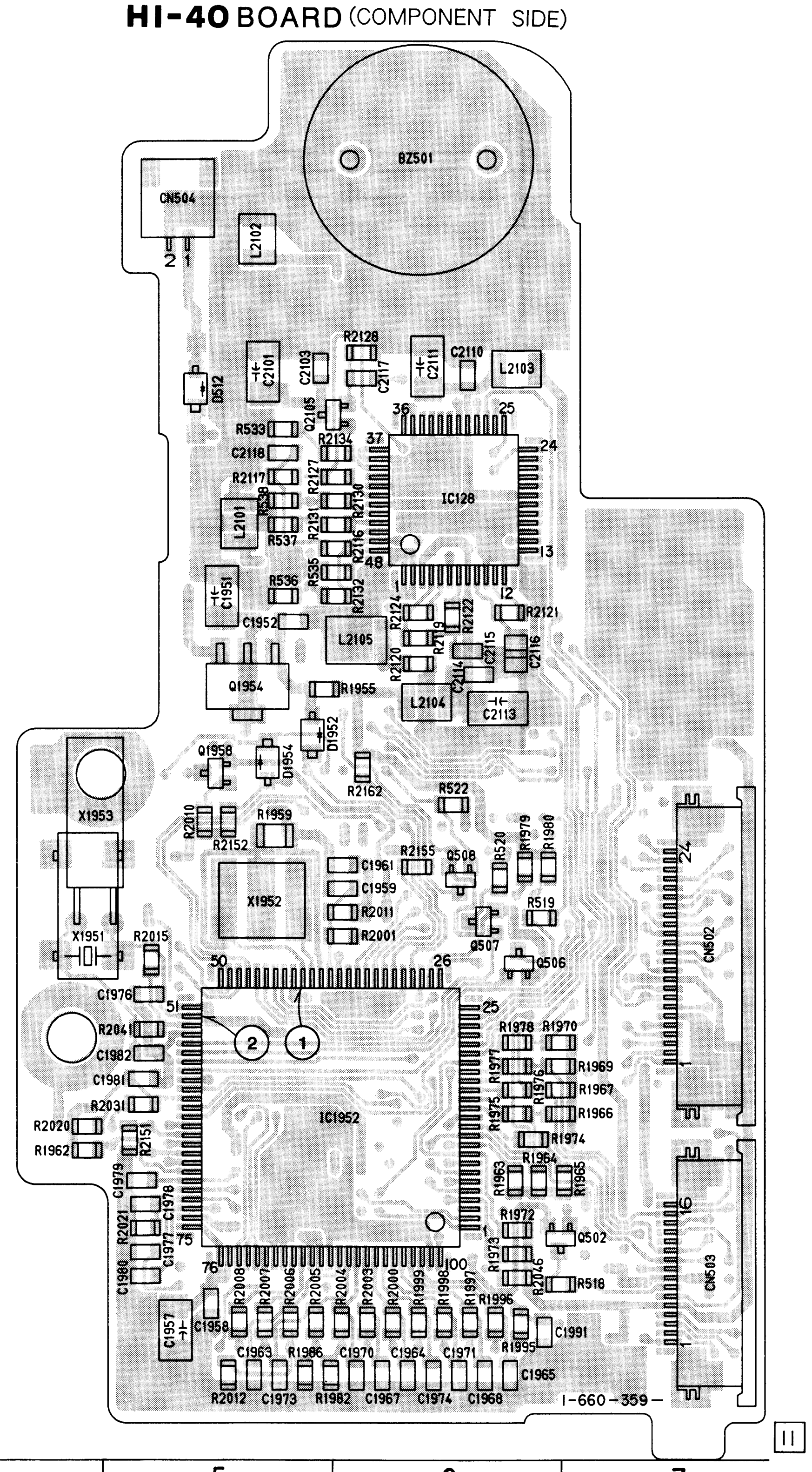

23
1
CPC
1
2
19
20
1-660-27-11
FP-379 S-CTS1
J903
(HEADPHONES)
II

## **HI-40 (MODE CONTROL) PRINTED WIRING BOARD**

— Ref No. HI-40 BOARD: 20,000 series —

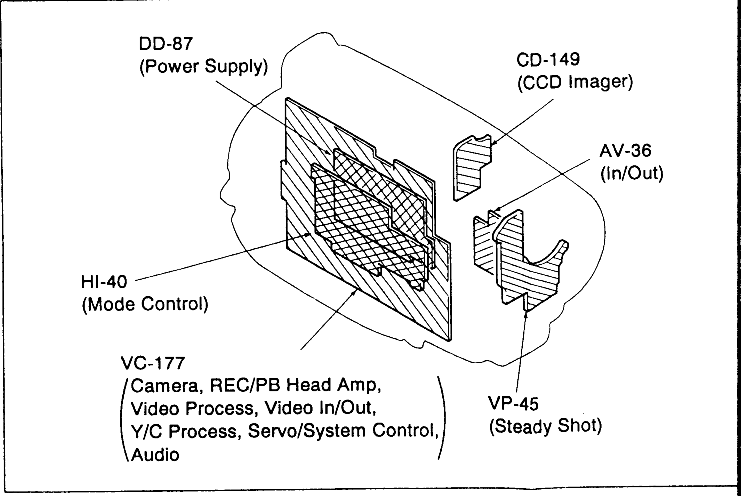
There are few cases that the part isn't mounted in this model is printed on this diagram.


HI-40 BOARD (CONDUCTOR SIDE)
F
E
D
C
B
A
1
2
3
4
R546
R545
Q2101
C2105
R2105
R2104
R2101
R2110
R2103
Q2102
C2106
R2102
R2133
R2108
C2108
R2112
R2111
Q2103
Q2104
C2109
C2107
R2113
C2112
R2044
R2039
R2038
R2037
R2036
IC1954
C1984
C501
R521
R523
Q1951
R1954
Q1955
Q1957
Q1953
D1951
Q1952
R1953
R2009
CN501
D1953
R1957
Q1963
R1956
R1958
Q1959
C1990
D509
D505
D506
D507
R511
R512
R505
R506
R513
R507
R509
R515
R508
D1956
C1956
IC1951
C1953
C1954
C1960
C1955
D1955
L1951
R2018
R2017
R2019
R2013
R2030
R2028
R2027
R2040
Q504
Q503
R525
R526
D517
Q505
R527
R524
Q509
D515
D516
R1960
C1986
FB501
FB502
FB503
R541
R2048
R2047
D1957
IC1955
C1989
C1988
R2049
R2025
R2026
R2032
R2023
R2022
R2029
D513
R540
D504
R539
R543
C1987
C1985
R1994
R1984
R1993
R1983
R1992
R1981
R528
R529
R1988
R542
R1987
R1991
R1985
R2024
09

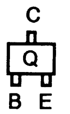

HI-40 BOARD (COMPONENT SIDE)
5
6
7
CN504
L2102
BZ501
D512
C2101
C2103
R2128
C2117
C2111
C2110
L2103
Q2105
R533
C2118
R2117
R2134
R2127
R2131
R2130
R2116
R2132
IC128
L2101
R537
R536
R535
C1951
C1952
L2105
R2124
R2120
R2119
R2122
C2115
C2114
R2121
C2116
Q1954
R1955
D1952
L2104
C2113
Q1958
D1954
R2162
R522
X1953
R2010
R2152
R1959
R2155
Q508
R520
R1979
R1980
X1952
C1961
C1959
R2011
R2001
R519
Q507
Q506
CN502
X1951
R2015
C1976
R2041
C1982
C1981
R2031
R2020
R1962
R2151
IC1952
R1978
R1970
R1969
R1967
R1966
R1974
R1964
R1965
R1963
R1972
Q502
R1973
R2046
R518
R1996
C1991
R1995
C1965
CN503
C1979
C1978
R2021
C1977
C1980
C1957
C1958
R2008
R2007
R2006
R2005
R2004
R2003
R2000
R1999
R1998
R1997
C1963
R1986
C1970
C1964
C1971
R2012
C1973
R1982
C1967
C1974
C1968
1-660-359-
II

HI-40 BOARD

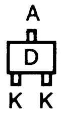
| | |
|---|---|
| BZ501 | F-6 |
| C501 | D-1 |
| C1951 | D-5 |
| C1952 | D-5 |
| C1955 | B-2 |
| C1956 | B-2 |
| C1957 | A-5 |
| C1958 | A-5 |
| C1959 | C-6 |
| C1961 | C-6 |
| C1976 | C-5 |
| C1977 | A-5 |
| C1978 | B-5 |
| C1980 | A-5 |
| C1981 | B-5 |
| C1982 | B-5 |
| C1984 | D-1 |
| C1986 | B-2 |
| C1987 | A-2 |
| C1988 | A-3 |
| C1989 | A-3 |
| C1990 | C-3 |
| C2101 | E-5 |
| C2102 | E-3 |
| C2103 | E-5 |
| C2105 | F-2 |
| C2106 | E-2 |
| C2107 | E-3 |
| C2108 | E-2 |
| C2109 | E-2 |
| C2110 | E-6 |
| C2111 | E-6 |
| C2112 | E-3 |
| C2113 | D-6 |
| C2114 | D-6 |
| C2115 | D-6 |
| C2116 | D-6 |
| C2117 | E-6 |
| C2118 | E-5 |
| CN501 | C-2 |
| CN502 | C-7 |
| CN503 | A-7 |
| CN504 | F-5 |
| D501 | B-1 |
| D502 | B-1 |
| D503 | A-1 |
| D504 | A-1 |
| D511 | B-1 |
| D512 | E-5 |
| D514 | C-1 |
| D515 | B-2 |
| D516 | B-2 |
| D1951 | D-3 |
| D1952 | D-5 |
| D1953 | C-3 |
| D1954 | D-5 |
| D1955 | B-2 |
| D1956 | C-3 |
| D1957 | A-2 |
| FB501 | B-1 |
| FB502 | A-1 |
| FB503 | A-1 |
| IC128 | E-6 |
| IC1951 | B-3 |
| IC1952 | B-6 |
| IC1954 | D-1 |
| IC1955 | A-2 |
| L1951 | B-3 |
| L2101 | E-5 |
| L2102 | F-5 |
| L2103 | E-6 |
| L2104 | D-6 |
| L2105 | D-6 |
| Q501 | D-1 |
| Q502 | A-6 |
| Q503 | B-1 |
| Q504 | B-1 |
| Q505 | B-1 |
| Q506 | C-6 |
| Q507 | C-6 |
| Q508 | C-6 |
| Q509 | B-2 |
| Q1951 | D-3 |
| Q1952 | D-2 |
| Q1953 | D-3 |
| Q1954 | D-5 |
| Q1955 | D-2 |
| Q1959 | C-3 |
| Q1963 | C-3 |
| Q2101 | F-3 |
| Q2102 | E-2 |
| Q2103 | E-3 |
| Q2104 | E-3 |
| Q2105 | E-5 |
| R510 | B-1 |
| R511 | C-1 |
| R512 | C-1 |
| R513 | B-1 |
| R514 | B-1 |
| R515 | B-1 |
| R516 | C-1 |
| R518 | A-6 |
| R519 | C-6 |
| R520 | C-6 |
| R521 | D-1 |
| R522 | C-6 |
| R523 | D-1 |
| R524 | B-1 |
| R525 | B-1 |
| R526 | B-1 |
| R527 | B-1 |
| R528 | A-3 |
| R529 | A-3 |
| R530 | C-1 |
| R531 | C-1 |
| R539 | A-1 |
| R540 | A-1 |
| R541 | A-1 |
| R542 | A-2 |
| R545 | F-2 |
| R1953 | D-3 |
| R1954 | D-3 |
| R1955 | D-6 |
| R1956 | C-3 |
| R1957 | C-3 |
| R1958 | C-3 |
| R1959 | C-5 |
| R1960 | B-2 |
| R1962 | B-4 |
| R1963 | B-6 |
| R1964 | B-6 |
| R1965 | B-6 |
| R1966 | B-6 |
| R1967 | B-6 |
| R1969 | B-6 |
| R1970 | B-6 |
| R1972 | A-6 |
| R1973 | A-6 |
| R1974 | B-6 |
| R1975 | B-6 |
| R1976 | B-6 |
| R1977 | B-6 |
| R1978 | B-6 |
| R1979 | C-6 |
| R1980 | C-6 |
| R1981 | A-3 |
| R1982 | A-5 |
| R1983 | A-2 |
| R1984 | A-2 |
| R1985 | A-3 |
| R1986 | A-5 |
| R1987 | A-2 |
| R1988 | A-2 |
| R1991 | A-3 |
| R1992 | A-2 |
| R1993 | A-2 |
| R1994 | A-2 |
| R1995 | A-6 |
| R1996 | A-6 |
| R1997 | A-6 |
| R1998 | A-6 |
| R1999 | A-6 |
| R2000 | A-6 |
| R2001 | C-6 |
| R2003 | A-6 |
| R2004 | A-6 |
| R2005 | A-5 |
| R2006 | A-5 |
| R2007 | A-5 |
| R2008 | A-5 |
| R2011 | C-6 |
| R2012 | A-5 |
| R2013 | B-3 |
| R2015 | C-5 |
| R2017 | B-3 |
| R2018 | B-3 |
| R2019 | B-3 |
| R2020 | B-4 |
| R2021 | B-5 |
| R2022 | A-3 |
| R2023 | A-3 |
| R2024 | A-3 |
| R2025 | A-3 |
| R2026 | A-3 |
| R2027 | B-3 |
| R2028 | B-3 |
| R2029 | A-3 |
| R2030 | B-3 |
| R2031 | B-5 |
| R2032 | A-3 |
| R2036 | D-1 |
| R2037 | D-1 |
| R2038 | D-1 |
| R2039 | D-1 |
| R2040 | B-3 |
| R2041 | B-5 |
| R2044 | D-1 |
| R2046 | A-6 |
| R2047 | A-2 |
| R2048 | A-2 |
| R2049 | A-3 |
| R2101 | F-3 |
| R2102 | E-3 |
| R2103 | E-2 |
| R2104 | E-3 |
| R2105 | E-2 |
| R2108 | E-2 |
| R2109 | E-3 |
| R2110 | E-2 |
| R2111 | E-3 |
| R2112 | E-2 |
| R2113 | E-2 |
| R2116 | D-6 |
| R2117 | E-5 |
| R2119 | D-6 |
| R2120 | D-6 |
| R2121 | D-6 |
| R2122 | D-6 |
| R2124 | D-6 |
| R2127 | E-6 |
| R2128 | E-6 |
| R2130 | E-6 |
| R2131 | E-6 |
| R2132 | D-6 |
| R2133 | E-2 |
| R2134 | E-6 |
| R2151 | B-5 |
| R2152 | C-5 |
| R2155 | C-6 |
| R2162 | D-6 |
| X1951 | C-4 |
| X1952 | C-5 |


DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio
VP-45
(Steady Shot)

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor

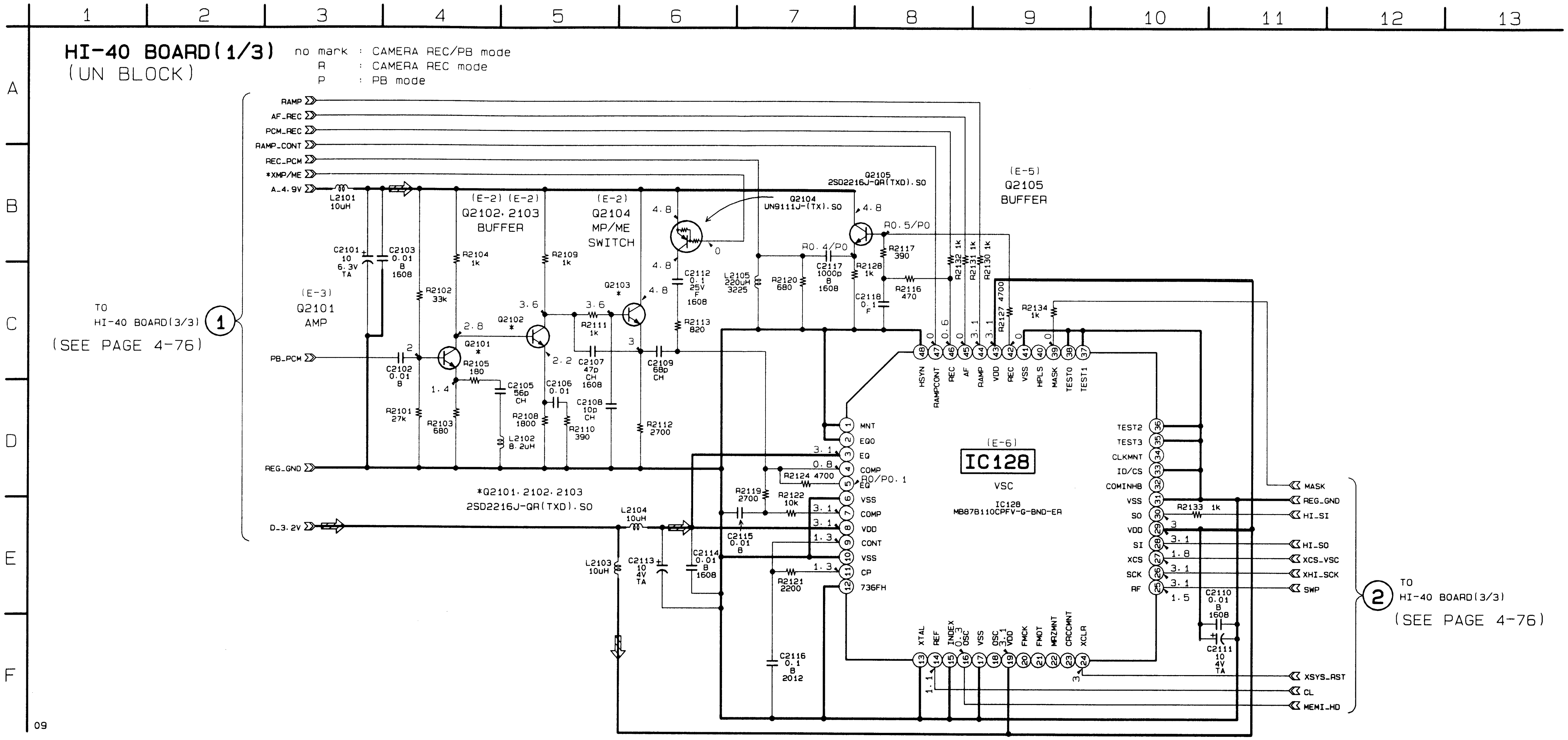


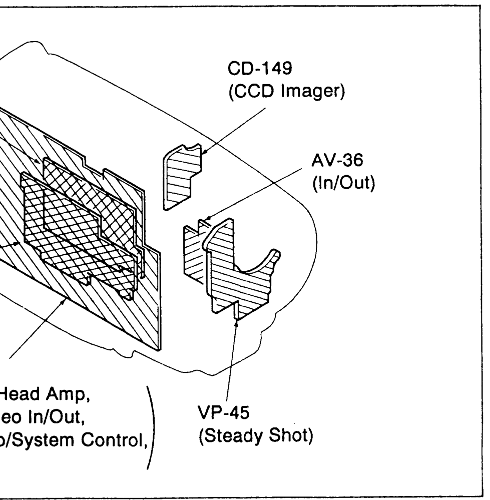
- Chip diode



# HI-40 (MODE CONTROL (1)) SCHEMATIC DIAGRAM

— Ref No. HI-40 BOARD: 20,000 series —

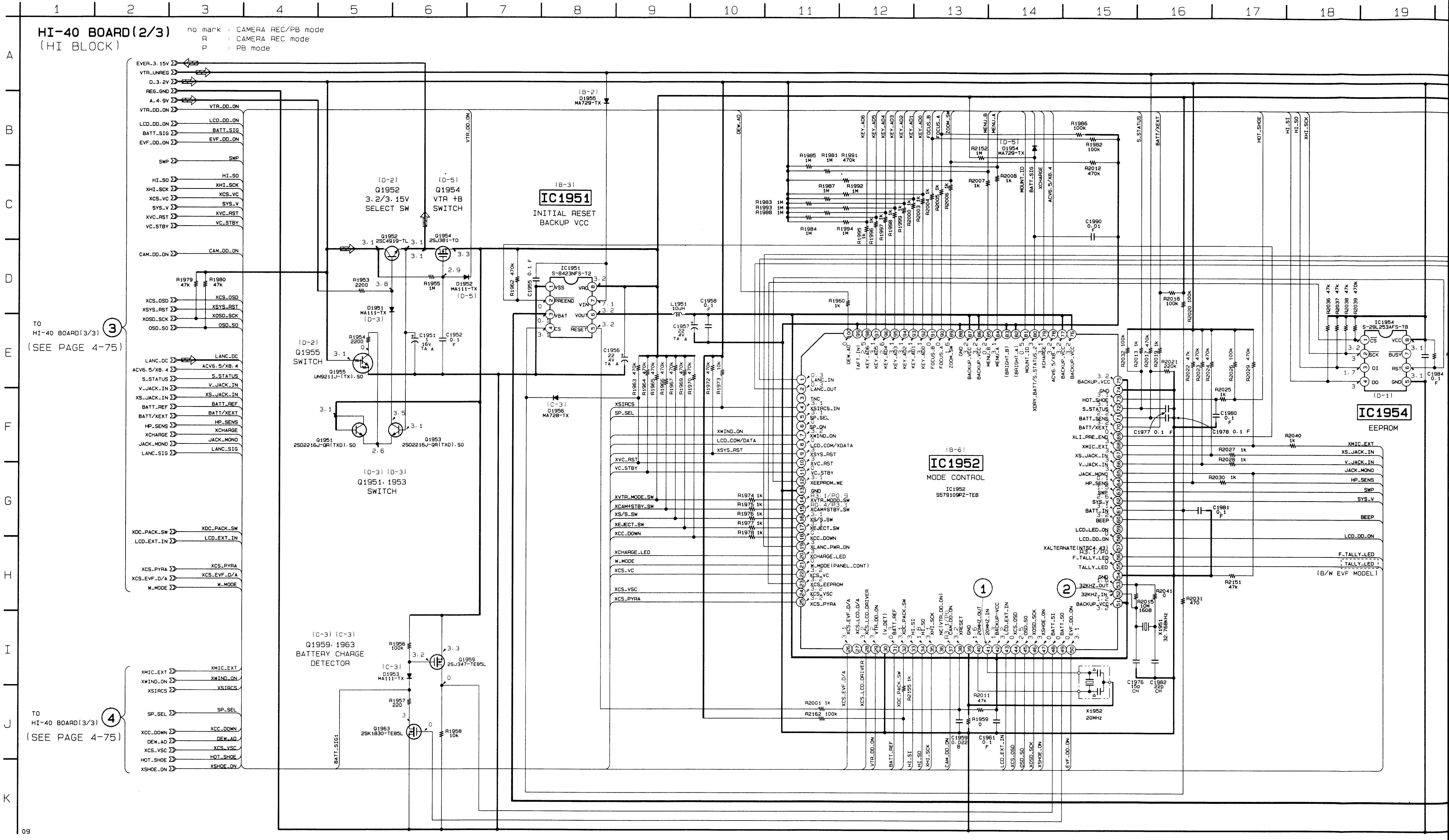

HI-40 BOARD(1/3)
(UN BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
RAMP
AF_REC
PCM_REC
RAMP_CONT
REC_PCM
*XMP/ME
A_4.9V
PB_PCM
REG_GND
D_3.2V
TO
HI-40 BOARD(3/3) ①
(SEE PAGE 4-76)
(E-3) Q2101 AMP
(E-2) (E-2) Q2102, 2103 BUFFER
(E-2) Q2104 MP/ME SWITCH
(E-5) Q2105 BUFFER
Q2104 UN9111J-(TX).SO
Q2105 2SD2216J-QR(TXD).SO
*Q2101, 2102, 2103 2SD2216J-QR(TXD).SO
(E-6) IC128 VSC
IC128 MB87B110CPFV-G-BND-ER
MNT
EQO
EQ
COMP
VSS
VDD
CONT
CP
736FH
HSYN
RAMPCONT
REC
AF
RAMP
HPLS
MASK
TEST0
TEST1
TEST2
TEST3
CLKMNT
ID/CS
COMINHB
SO
SI
XCS
SCK
RF
XTAL
REF
INDEX
OSC
FMCK
FMOT
MRZMNT
CRCCMNT
XCLR
MASK
REG_GND
HI_SI
HI_SO
XCS_VSC
XHI_SCK
SWP
XSYS_RST
CL
MEMI_HD
② TO
HI-40 BOARD(3/3)
(SEE PAGE 4-76)
09


CD-149
(CCD Imager)
AV-36
(In/Out)
Head Amp,
eo In/Out,
/System Control,
VP-45
(Steady Shot)

# HI-40 (MODE CONTROL (2)) SCHEMATIC DIAGRAM

— Ref No. HI-40 BOARD: 20,000 series —

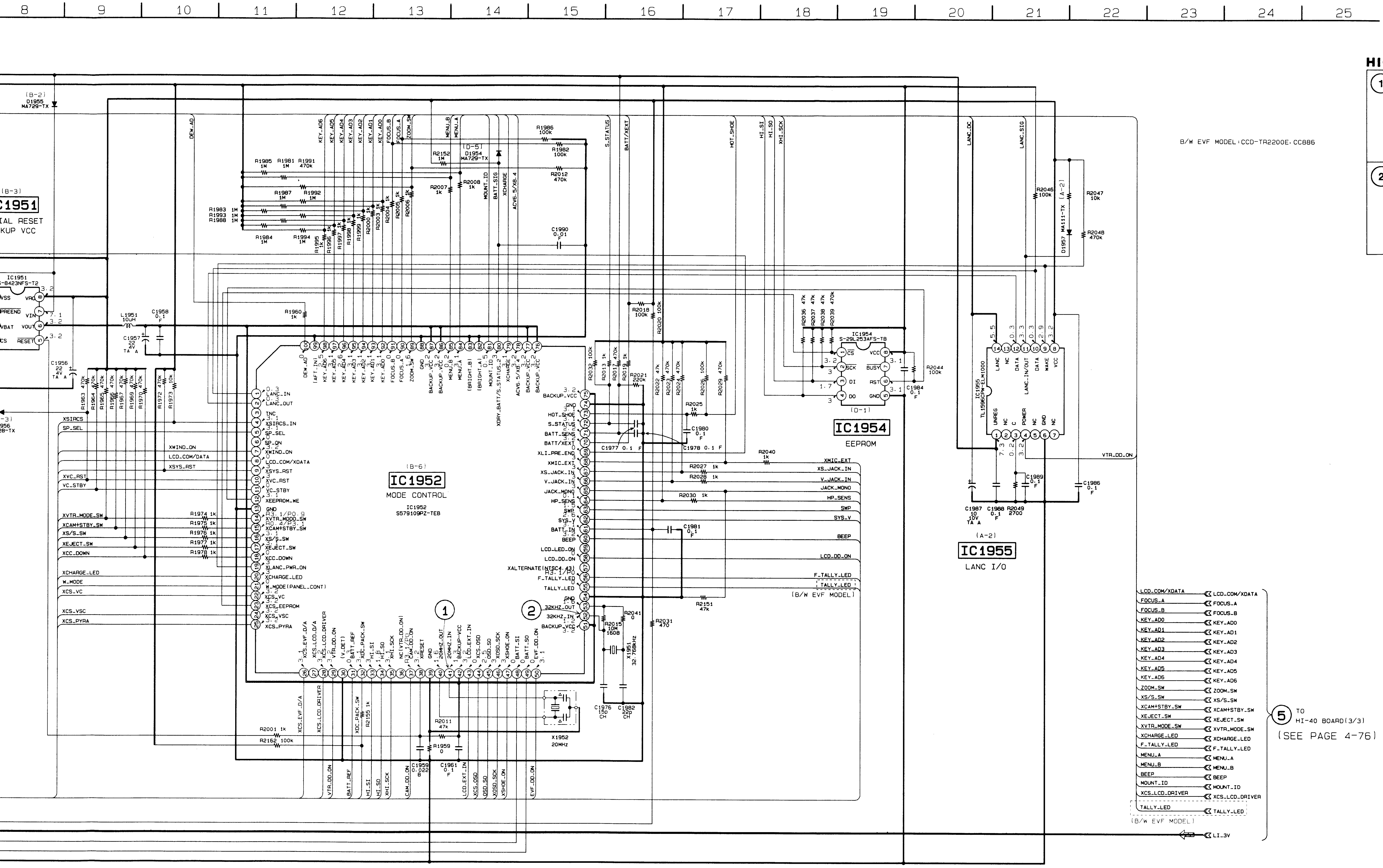
- Refer to page 4-67 for Printed Wiring Board.



HI-40 BOARD(2/3)
(HI BLOCK)
no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode
EVER_3.15V
VTR_UNREG
D_3.2V
REG_GND
A_4.9V
VTR_DD_ON
LCD_DD_ON
BATT_SIG
EVF_DD_ON
SWP
HI_SO
XHI_SCK
XCS_VC
SYS_V
XVC_RST
VC_STBY
CAM_DD_ON
XCS_OSD
XSYS_RST
XOSD_SCK
OSD_SO
TO
HI-40 BOARD(3/3) ③
(SEE PAGE 4-75)
LANC_DC
ACV6.5/X8.4
S_STATUS
V_JACK_IN
XS_JACK_IN
BATT_REF
BATT/XEXT
HP_SENS
XCHARGE
JACK_MONO
LANC_SIG
XDC_PACK_SW
LCD_EXT_IN
XCS_PYRA
XCS_EVF_D/A
W_MODE
XMIC_EXT
XWIND_ON
XSIRCS
TO
HI-40 BOARD(3/3) ④
(SEE PAGE 4-75)
SP_SEL
XCC_DOWN
DEW_AD
XCS_VSC
HOT_SHOE
XSHOE_ON
(D-2)
Q1952
3.2/3.15V
SELECT SW
(D-5)
Q1954
VTR +B
SWITCH
Q1952
2SC4919-TL
Q1954
2SJ381-TD
(B-3)
IC1951
INITIAL RESET
BACKUP VCC
IC1951
S-8423NFS-T2
(B-2)
D1955
MA729-TX
D1952
MA111-TX
D1951
MA111-TX
R1953 2200
R1955 1M
R1979 47k
R1980 47k
R1954 2200
C1951 1 16V TA A
C1952 0.1 F
(D-2)
Q1955
SWITCH
Q1955
UN9211J-(TX).SO
Q1951
2SD2216J-QR(TXD).SO
Q1953
2SD2216J-QR(TXD).SO
(D-3) (D-3)
Q1951, 1953
SWITCH
(C-3)
D1956
MA728-TX
R1962 470k
C1955 0.1 F
L1951 10uH
C1958 0.1 F
C1957 22 4V TA A
C1956 22 4V TA A
(C-3) (C-3)
Q1959, 1963
BATTERY CHARGE
DETECTOR
R1956 100k
Q1959
2SJ347-TE85L
(C-3)
D1953
MA111-TX
R1957 220
Q1963
2SK1830-TE85L
R1958 10k
BATT_SIG1
(B-6)
IC1952
MODE CONTROL
IC1952
S579109PZ-TEB
KEY_AD6
KEY_AD5
KEY_AD4
KEY_AD3
KEY_AD2
KEY_AD1
KEY_AD0
FOCUS_B
FOCUS_A
ZOOM_SW
MENU_B
MENU_A
R1985 1M
R1981 1M
R1991 470k
R1987 1M
R1992 1M
R1983 1M
R1993 1M
R1988 1M
R1984 1M
R1994 1M
R2152 1M
(D-5)
D1954
MA729-TX
R2007 1k
R2008 1k
MOUNT_ID
BATT_SIG
XCHARGE
ACV6.5/X8.4
R1986 100k
R1982 100k
R2012 470k
C1990 0.01 F
S_STATUS
BATT/XEXT
HOT_SHOE
HI_SI
HI_SO
XHI_SCK
R1960 1k
XSIRCS
SP_SEL
XWIND_ON
LCD_COM/DATA
XSYS_RST
XVC_RST
VC_STBY
XVTR_MODE_SW
XCAM+STBY_SW
XS/S_SW
XEJECT_SW
XCC_DOWN
XCHARGE_LED
W_MODE
XCS_VC
XCS_VSC
XCS_PYRA
R1974 1k
R1975 1k
R1976 1k
R1977 1k
R1978 1k
R2001 1k
R2162 100k
R2011 47k
R1959 0
C1959 0.022 B
C1961 0.1 F
X1952
20MHz
C1976 15p CH
C1982 22p CH
X1951
32.768kHz
R2015 10M 1608
R2041 0
R2031 470
R2151 47k
BACKUP_VCC
32KHZ_OUT
32KHZ_IN
TALLY_LED
F_TALLY_LED
XALTERNATE(NTSC4.43)
LCD_DD_ON
LCD_LED_ON
BEEP
BATT_IN
SYS_V
SWP
HP_SENS
JACK_MONO
V_JACK_IN
XS_JACK_IN
XMIC_EXT
XLI_PRE_END
BATT/XEXT
BATT_SENS
S_STATUS
HOT_SHOE
GND
C1977 0.1 F
C1978 0.1 F
C1980 0.1 F
C1981 0.1 F
R2021 220k
R2025 1k
R2027 1k
R2028 1k
R2030 1k
R2040 1k
R2018 100k
R2020 100k
R2036 47k
R2037 47k
R2038 47k
R2039 470k
IC1954
S-29L253AFS-TB
CS
SK
DI
DO
VCC
BUSY
RST
GND
(D-1)
IC1954
EEPROM
C1984 0.1 F
XMIC_EXT
XS_JACK_IN
V_JACK_IN
JACK_MONO
HP_SENS
SWP
SYS_V
BEEP
LCD_DD_ON
F_TALLY_LED
TALLY_LED
(B/W EVF MODEL)
XCS_EVF_D/A
XCS_LCD_DRIVER
XDC_PACK_SW
R2155 1k
VTR_DD_ON
BATT_REF
HI_SI
HI_SO
XHI_SCK
CAM_DD_ON
LCD_EXT_IN
XCS_OSD
OSD_SO
XOSD_SCK
XSHOE_ON
EVF_DD_ON
DEW_AD
①
②

## MODE CONTROL (2)

HI-40 (2/3)


8
9
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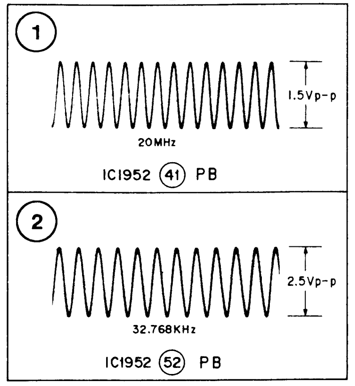
13
14
15
16
17
18
19
20
21
22
23
24
25
IC1951
IAL RESET
KUP VCC
IC1952
MODE CONTROL
IC1952
S579109PZ-TEB
(B-6)
IC1954
EEPROM
(D-1)
IC1954
S-29L253AFS-TB
IC1955
LANC I/O
(A-2)
IC1955
TL1596CPW-ELM1000
D1955
MA729-TX
D1954
MA729-TX
D1957
MA111-TX
X1952
20MHz
X1951
32.768kHz
(B/W EVF MODEL)
5
TO
HI-40 BOARD(3/3)
(SEE PAGE 4-76)

B/W EVF MODEL:CCD-TR2200E, CC886

## HI-40 BOARD



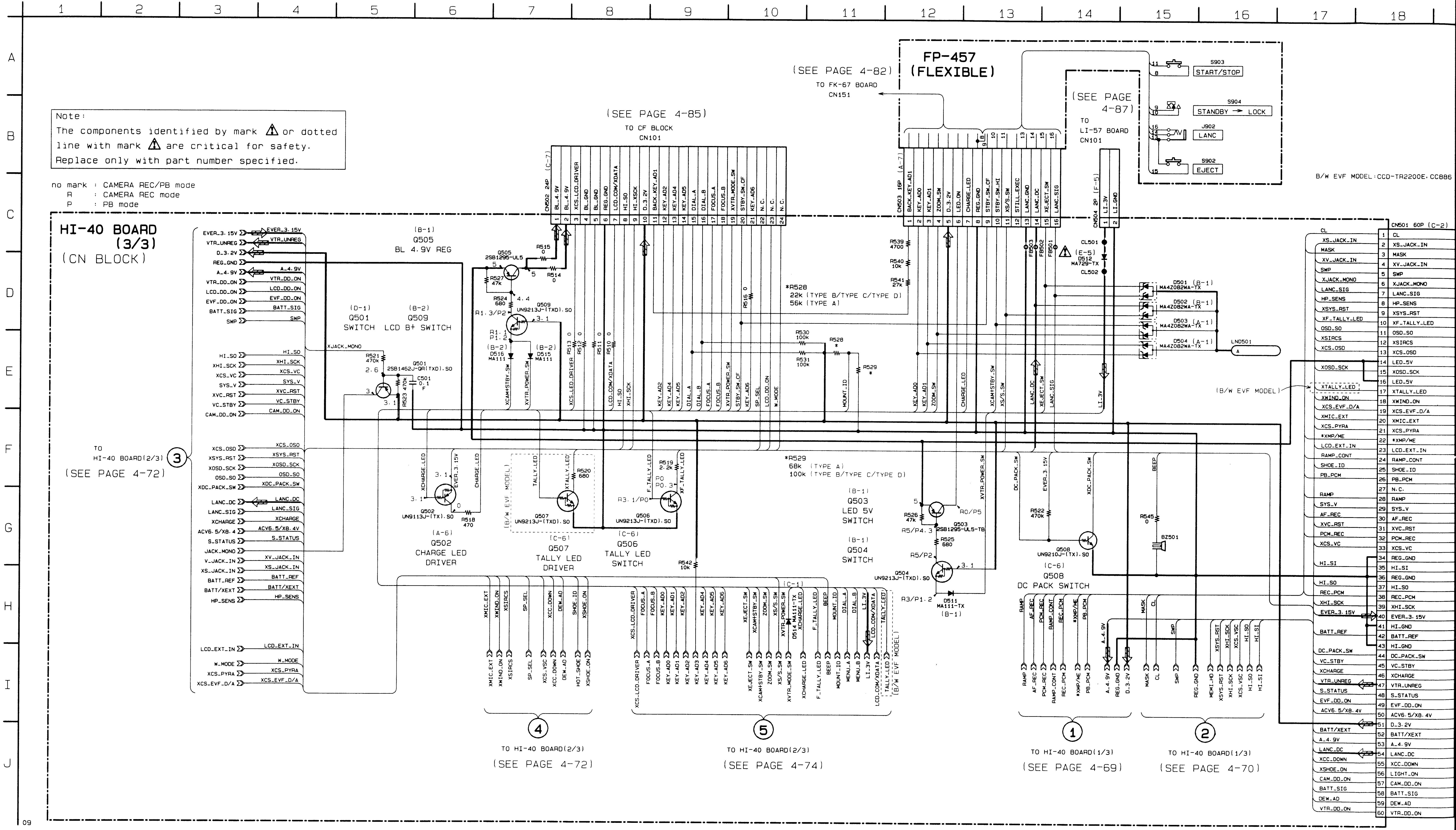
## HI-40 (MODE CONTROL (3)), FP-457 (FUNCTION SWITCH) SCHEMATIC DIAGRAMS

— Ref No. HI-40 BOARD: 20,000 series —

- Refer to page 4-67 for Printed Wiring Board.

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

no mark : CAMERA REC/PB mode
R : CAMERA REC mode
P : PB mode



1
2
3
4
5
6
7
8
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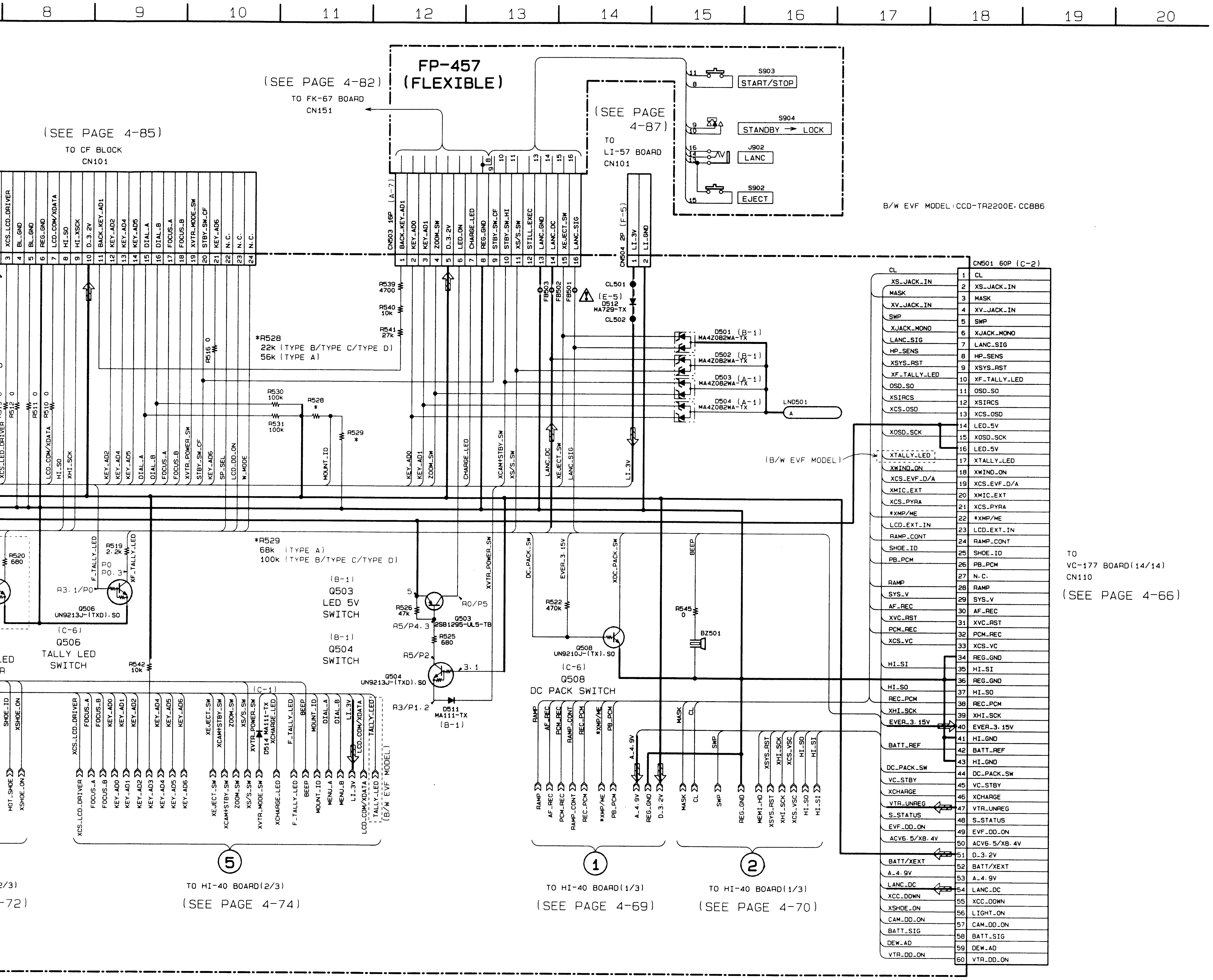
12
13
14
15
16
17
18
A
B
C
D
E
F
G
H
I
J
HI-40 BOARD (3/3) (CN BLOCK)
FP-457 (FLEXIBLE)
(SEE PAGE 4-82) TO FK-67 BOARD CN151
(SEE PAGE 4-87) TO LI-57 BOARD CN101
(SEE PAGE 4-85) TO CF BLOCK CN101
S903 START/STOP
S904 STANDBY → LOCK
J902 LANC
S902 EJECT
B/W EVF MODEL:CCD-TR2200E, CC886
CN502 24P (C-7)
CN503 16P (A-7)
CN504 2P (F-5)
CN501 60P (C-2)
(B-1) Q505 BL 4.9V REG
(D-1) Q501 SWITCH
(B-2) Q509 LCD B+ SWITCH
(A-6) Q502 CHARGE LED DRIVER
(C-6) Q507 TALLY LED DRIVER
(C-6) Q506 TALLY LED SWITCH
(B-1) Q503 LED 5V SWITCH
(B-1) Q504 SWITCH
(C-6) Q508 DC PACK SWITCH
*R528 22k (TYPE B/TYPE C/TYPE D) 56k (TYPE A)
*R529 68k (TYPE A) 100k (TYPE B/TYPE C/TYPE D)
(B/W EVF MODEL)
D501 (B-1) MA4Z082WA-TX
D502 (B-1) MA4Z082WA-TX
D503 (A-1) MA4Z082WA-TX
D504 (A-1) MA4Z082WA-TX
D512 MA729-TX
D511 MA111-TX
BZ501
LND501
TO HI-40 BOARD(2/3) (SEE PAGE 4-72)
TO HI-40 BOARD(2/3) (SEE PAGE 4-72)
TO HI-40 BOARD(2/3) (SEE PAGE 4-74)
TO HI-40 BOARD(1/3) (SEE PAGE 4-69)
TO HI-40 BOARD(1/3) (SEE PAGE 4-70)
09

- Refer to page 4-67 for Printed Wiring Board.



8
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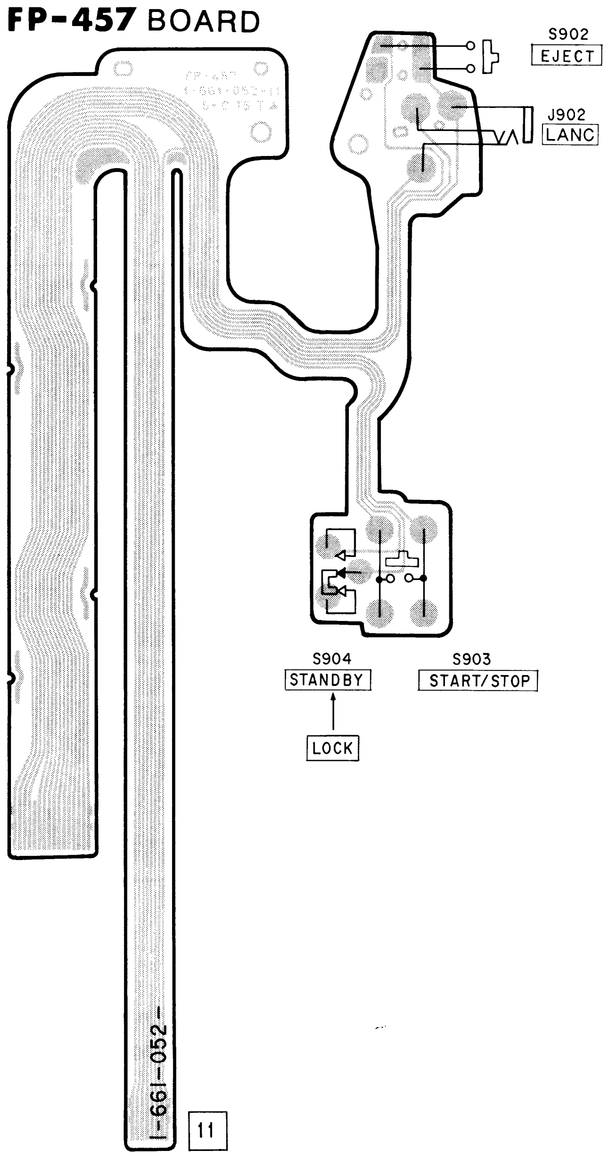
19
20
FP-457
(FLEXIBLE)
(SEE PAGE 4-82)
TO FK-67 BOARD
CN151
(SEE PAGE 4-85)
TO CF BLOCK
CN101
(SEE PAGE 4-87)
TO
LI-57 BOARD
CN101
S903
START/STOP
S904
STANDBY → LOCK
J902
LANC
S902
EJECT
B/W EVF MODEL:CCD-TR2200E, CC886
CN503 16P (A-7)
CN504 2P (F-5)
CN501 60P (C-2)
BACK_KEY_AD1
KEY_AD0
KEY_AD1
ZOOM_SW
D_3.2V
LED_ON
CHARGE_LED
REG_GND
STBY_SW_CF
STBY_SW_HI
XS/S_SW
STILL_EXEC
LANC_GND
LANC_DC
XEJECT_SW
LANC_SIG
LI_3V
LI_GND
XCS_LCD_DRIVER
BL_GND
REG_GND
LCD_COM/XDATA
HI_SO
HI_XSCK
D_3.2V
BACK_KEY_AD1
KEY_AD2
KEY_AD4
KEY_AD5
DIAL_A
DIAL_B
FOCUS_A
FOCUS_B
XVTR_MODE_SW
STBY_SW_CF
KEY_AD6
N.C.
R539 4700
R540 10k
R541 27k
*R528
22k (TYPE B/TYPE C/TYPE D)
56k (TYPE A)
R516 0
R530 100k
R531 100k
R528 *
R529 *
CL501
D512 MA729-TX
(E-5)
CL502
FB503
FB502
FB501
D501 (B-1) MA4Z082WA-TX
D502 (B-1) MA4Z082WA-TX
D503 (A-1) MA4Z082WA-TX
D504 (A-1) MA4Z082WA-TX
LND501
(B/W EVF MODEL)
MOUNT_ID
*R529
68k (TYPE A)
100k (TYPE B/TYPE C/TYPE D)
(B-1)
Q503
LED 5V
SWITCH
(B-1)
Q504
SWITCH
Q503
2SB1295-UL5-TB
Q504
UN9213J-(TXD).SO
D511
MA111-TX
(B-1)
R526 47k
R525 680
R522 470k
R545 0
BZ501
Q508
UN9210J-(TX).SO
(C-6)
Q508
DC PACK SWITCH
R520 680
R519 2.2k
Q506
UN9213J-(TXD).SO
(C-6)
Q506
TALLY LED
SWITCH
R542 10k
D514 MA111-TX
(C-1)
XVTR_POWER_SW
DC_PACK_SW
EVER_3.15V
XDC_PACK_SW
BEEP
5
1
2
TO HI-40 BOARD(2/3)
(SEE PAGE 4-74)
TO HI-40 BOARD(1/3)
(SEE PAGE 4-69)
TO HI-40 BOARD(1/3)
(SEE PAGE 4-70)
TO
VC-177 BOARD(14/14)
CN110
(SEE PAGE 4-66)
1 CL
2 XS_JACK_IN
3 MASK
4 XV_JACK_IN
5 SWP
6 XJACK_MONO
7 LANC_SIG
8 HP_SENS
9 XSYS_RST
10 XF_TALLY_LED
11 OSD_SO
12 XSIRCS
13 XCS_OSD
14 LED_5V
15 XOSD_SCK
16 LED_5V
17 XTALLY_LED
18 XWIND_ON
19 XCS_EVF_D/A
20 XMIC_EXT
21 XCS_PYRA
22 *XMP/ME
23 LCD_EXT_IN
24 RAMP_CONT
25 SHOE_ID
26 PB_PCM
27 N.C.
28 RAMP
29 SYS_V
30 AF_REC
31 XVC_RST
32 PCM_REC
33 XCS_VC
34 REG_GND
35 HI_SI
36 REG_GND
37 HI_SO
38 REC_PCM
39 XHI_SCK
40 EVER_3.15V
41 HI_GND
42 BATT_REF
43 HI_GND
44 DC_PACK_SW
45 VC_STBY
46 XCHARGE
47 VTR_UNREG
48 S_STATUS
49 EVF_DD_ON
50 ACV6.5/X8.4V
51 D_3.2V
52 BATT/XEXT
53 A_4.9V
54 LANC_DC
55 XCC_DOWN
56 LIGHT_ON
57 CAM_DD_ON
58 BATT_SIG
59 DEW_AD
60 VTR_DD_ON

## FP-457 (FUNCTION SWITCH) FLEXIBLE BOARD



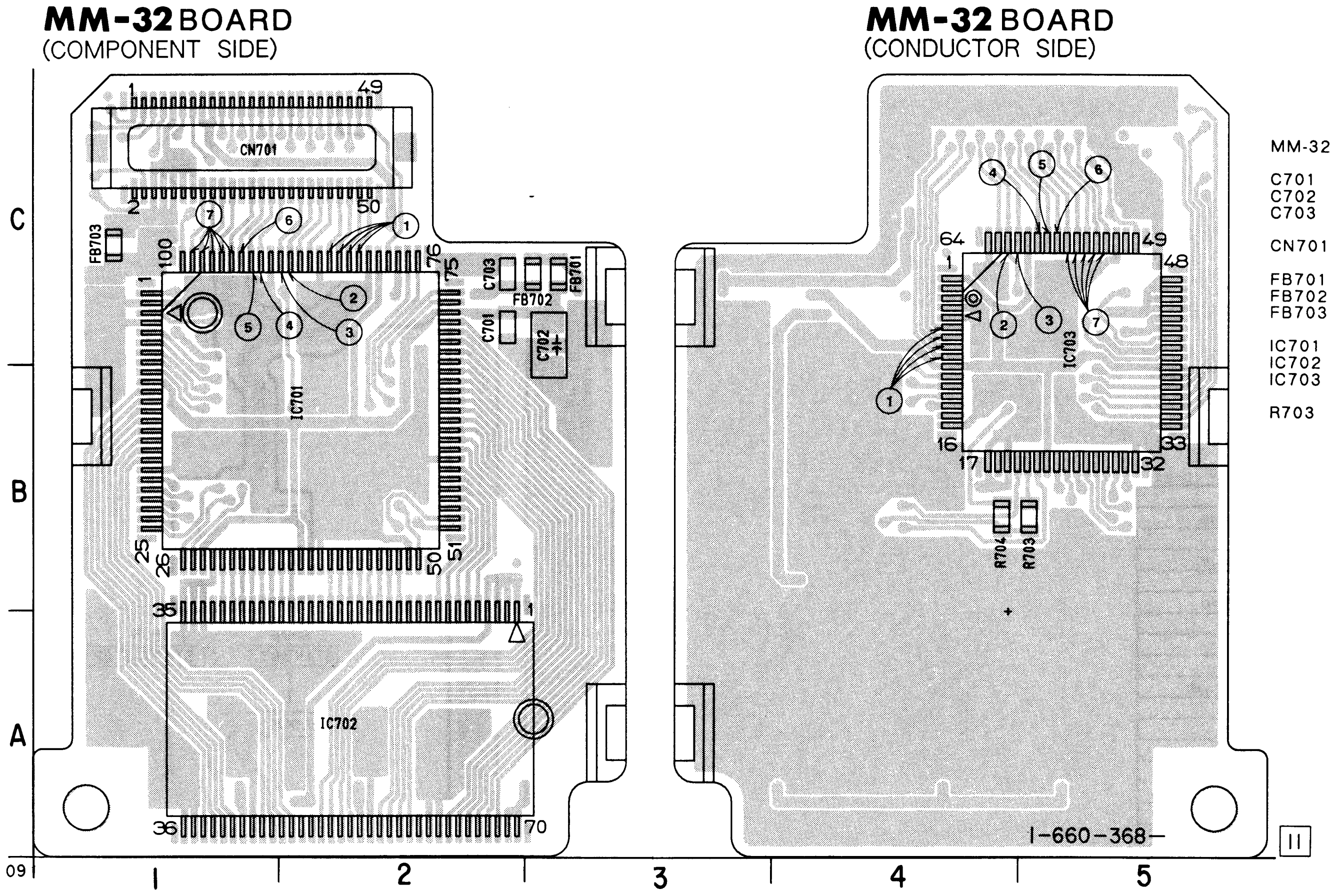
FP-457 BOARD
S902
EJECT
J902
LANC
S904
STANDBY
LOCK
S903
START/STOP
1-661-052-
11

## MODE CONTROL (3), FUNCTION SWITCH

HI-40 (3/3), FP-457

## MM-32 (DIGITAL MEMORY) PRINTED WIRING BOARD (DIGITAL MEMORY MODEL)

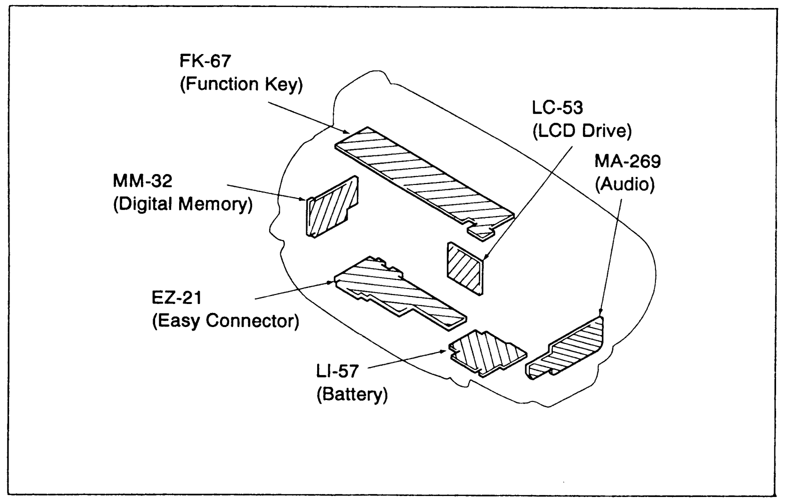
— Ref No. MM-32 BOARD: 9,000 series —


MM-32 BOARD
(COMPONENT SIDE)
MM-32 BOARD
(CONDUCTOR SIDE)
CN701
FB703
FB702
FB701
C703
C701
C702
IC701
IC702
IC703
R704
R703
1-660-368-
II
09
1
2
3
4
5
A
B
C

| MM-32 | BOARD |
|---|---|
| C701 | C-2 |
| C702 | C-3 |
| C703 | C-2 |
| CN701 | C-1 |
| FB701 | C-3 |
| FB702 | C-3 |
| FB703 | C-1 |
| IC701 | B-2 |
| IC702 | A-2 |
| IC703 | C-5 |
| R703 | B-5 |

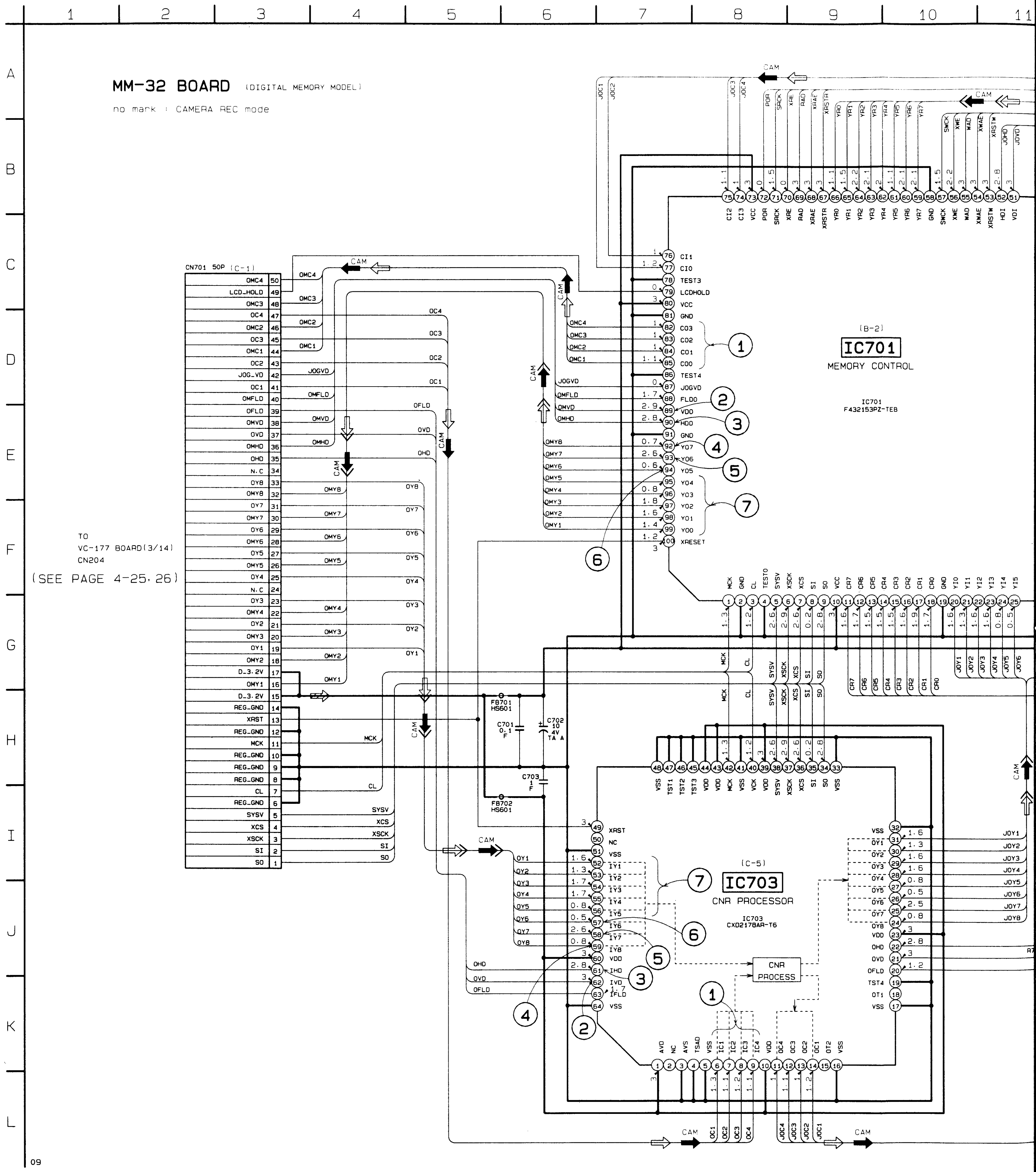
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.


FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)

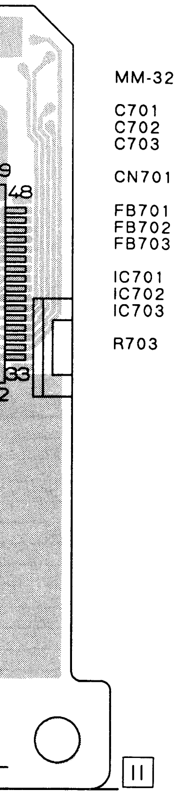
## MM-32 (DIGITAL MEMORY) SCHEMATIC DIAGRAM (DIGITAL MEMORY MODEL)

— Ref No. MM-32 BOARD: 9,000 series —


MM-32 BOARD (DIGITAL MEMORY MODEL)
no mark : CAMERA REC mode
CN701 50P (C-1)
OMC4 50
LCD_HOLD 49
OMC3 48
OC4 47
OMC2 46
OC3 45
OMC1 44
OC2 43
JOG_VD 42
OC1 41
OMFLD 40
OFLD 39
OMVD 38
OVD 37
OMHD 36
OHD 35
N.C 34
OY8 33
OMY8 32
OY7 31
OMY7 30
OY6 29
OMY6 28
OY5 27
OMY5 26
OY4 25
N.C 24
OY3 23
OMY4 22
OY2 21
OMY3 20
OY1 19
OMY2 18
D_3.2V 17
OMY1 16
D_3.2V 15
REG_GND 14
XRST 13
REG_GND 12
MCK 11
REG_GND 10
REG_GND 9
REG_GND 8
CL 7
REG_GND 6
SYSV 5
XCS 4
XSCK 3
SI 2
SO 1
TO
VC-177 BOARD(3/14)
CN204
(SEE PAGE 4-25, 26)
CAM
FB701
HS601
FB702
HS601
C701
0.1
F
C702
10
4V
TA A
C703
1
F
(B-2)
IC701
MEMORY CONTROL
IC701
F432153PZ-TEB
(C-5)
IC703
CNR PROCESSOR
IC703
CXD2178AR-T6
CNR
PROCESS
09
1
2
3
4
5
6
7
8
9
10
11
A
B
C
D
E
F
G
H
I
J
K
L

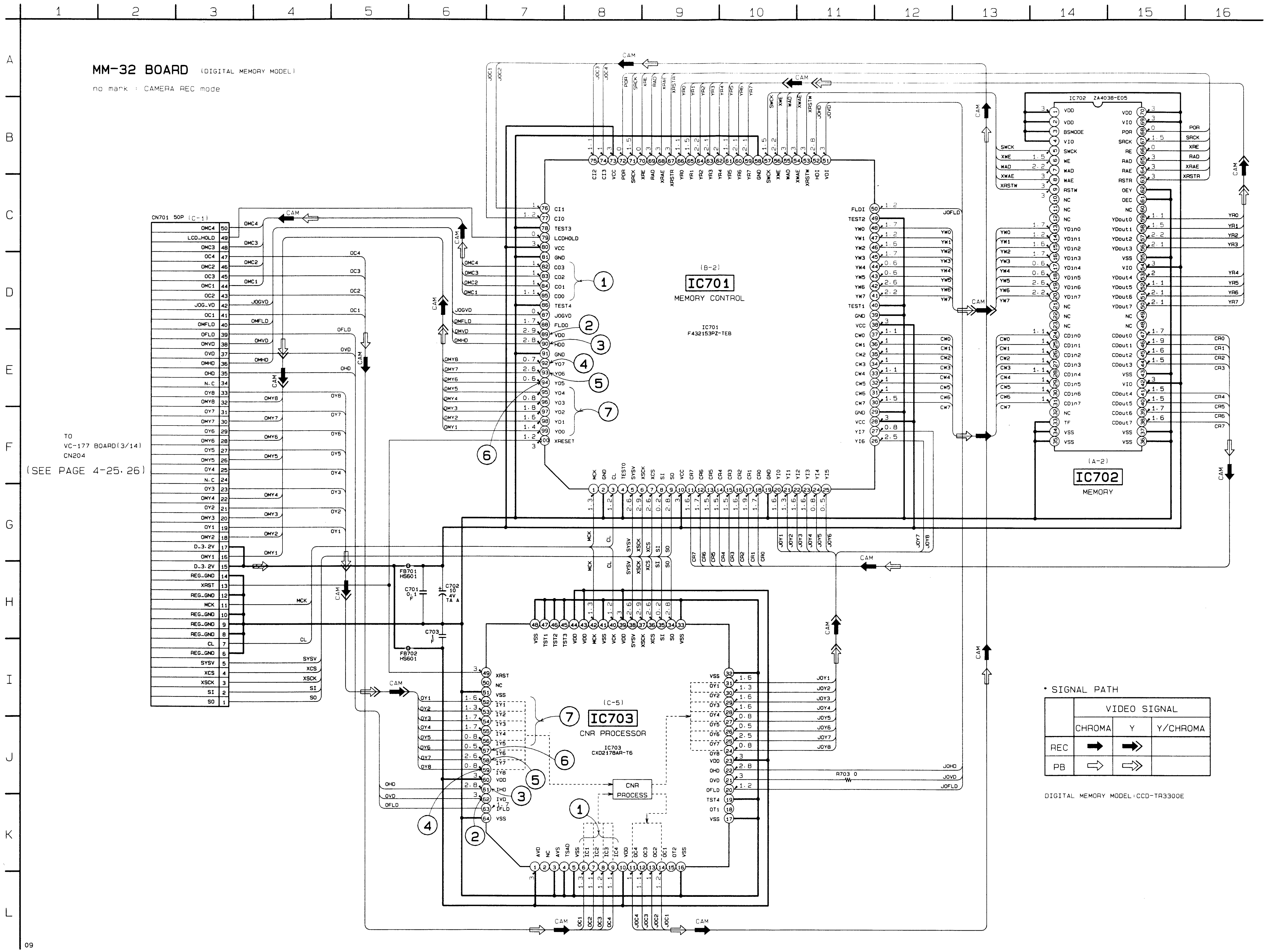
## MM-32 (DIGITAL MEMORY) SCHEMATIC DIAGRAM (DIGITAL MEMORY MODEL)

— Ref No. MM-32 BOARD: 9,000 series —



| MM-32 BOARD | |
|---|---|
| C701 | C-2 |
| C702 | C-3 |
| C703 | C-2 |
| CN701 | C-1 |
| FB701 | C-3 |
| FB702 | C-3 |
| FB703 | C-1 |
| IC701 | B-2 |
| IC702 | A-2 |
| IC703 | C-5 |
| R703 | B-5 |

in this model is

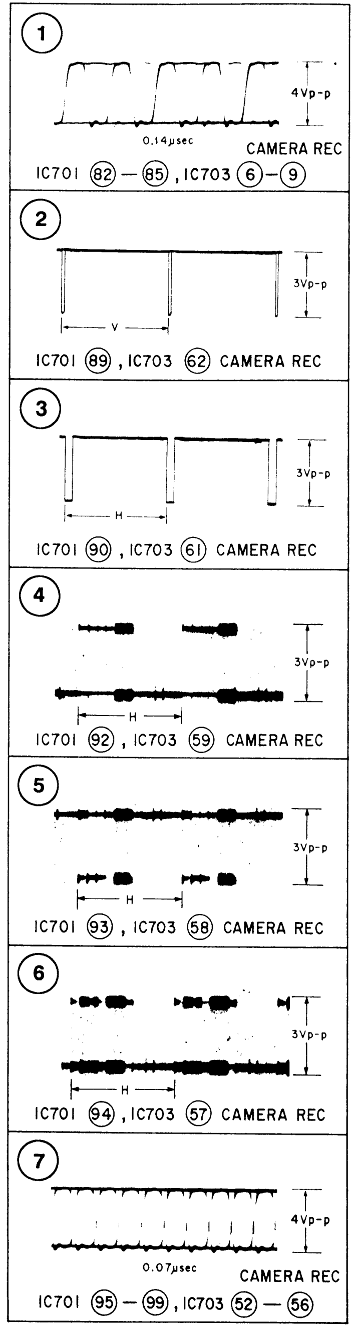

MM-32 BOARD (DIGITAL MEMORY MODEL)
no mark : CAMERA REC mode
CN701 50P (C-1)
TO VC-177 BOARD(3/14) CN204
(SEE PAGE 4-25, 26)
(B-2) IC701 MEMORY CONTROL
IC701 F432153PZ-TEB
IC702 ZA4038-E05
(A-2) IC702 MEMORY
(C-5) IC703 CNR PROCESSOR
IC703 CXD2178AR-T6
CNR PROCESS
FB701 HS601
FB702 HS601
C701 0.1 F
C702 10 4V TA A
C703 1 F
R703 0
CAM
09

• SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | ⇛ | |
| PB | ⇨ | ⇨ | |

DIGITAL MEMORY MODEL:CCD-TR3300E

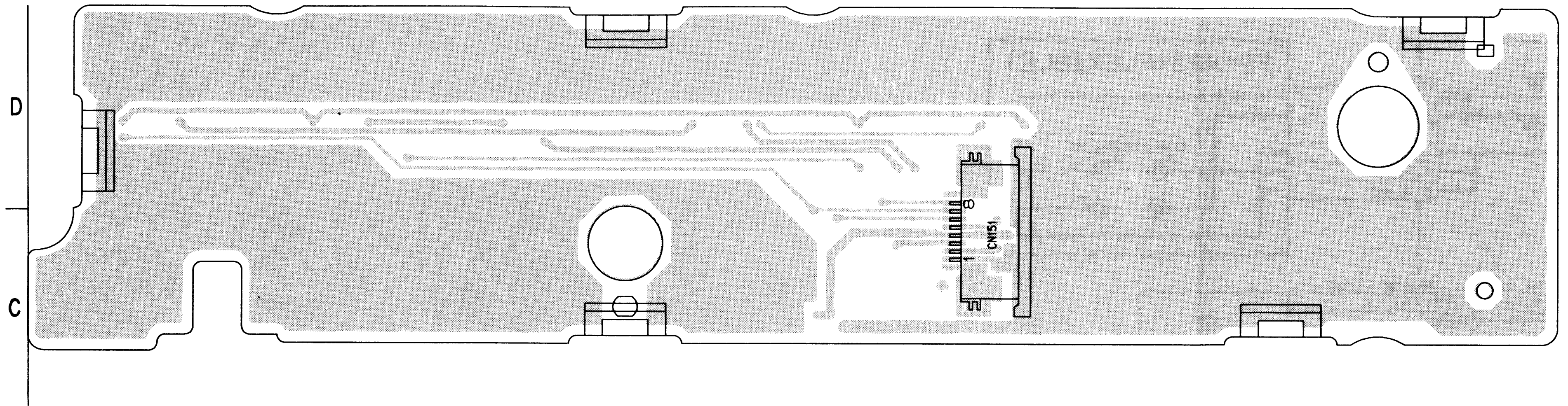
**MM-32** BOARD



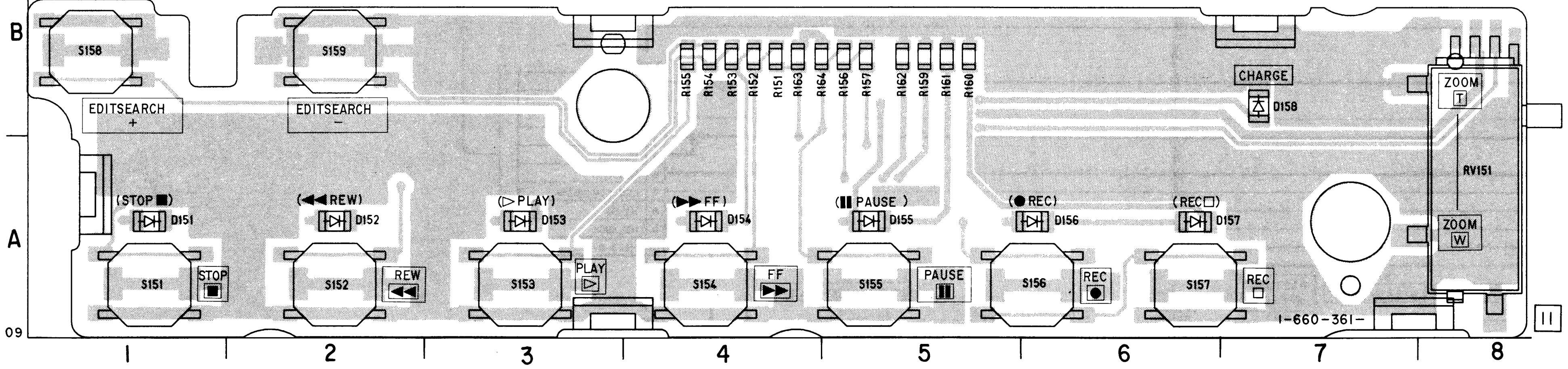
## FK-67 (FUNCTION KEY) PRINTED WIRING BOARD

— Ref No. FK-67 BOARD: 3,000 series —

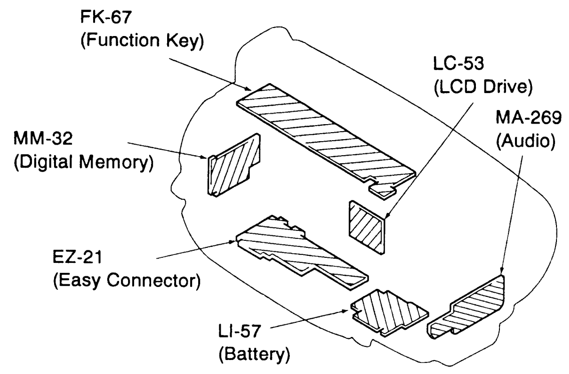
**FK-67** BOARD (CONDUCTOR SIDE)



**FK-67** BOARD (COMPONENT SIDE)


B
A
09
S158
S159
EDITSEARCH +
EDITSEARCH −
R155
R154
R153
R152
R151
R163
R164
R156
R157
R162
R159
R161
R160
CHARGE
D158
ZOOM T
RV151
ZOOM W
(STOP ■)
D151
(◀◀ REW)
D152
(▷ PLAY)
D153
(▶▶ FF)
D154
(▮▮ PAUSE)
D155
(● REC)
D156
(REC□)
D157
S151
STOP ■
S152
REW ◀◀
S153
PLAY ▷
S154
FF ▶▶
S155
PAUSE ▮▮
S156
REC ●
S157
REC □
1-660-361-
11
1
2
3
4
5
6
7
8

There are few cases that the part isn't mounted in this model is printed on this diagram.

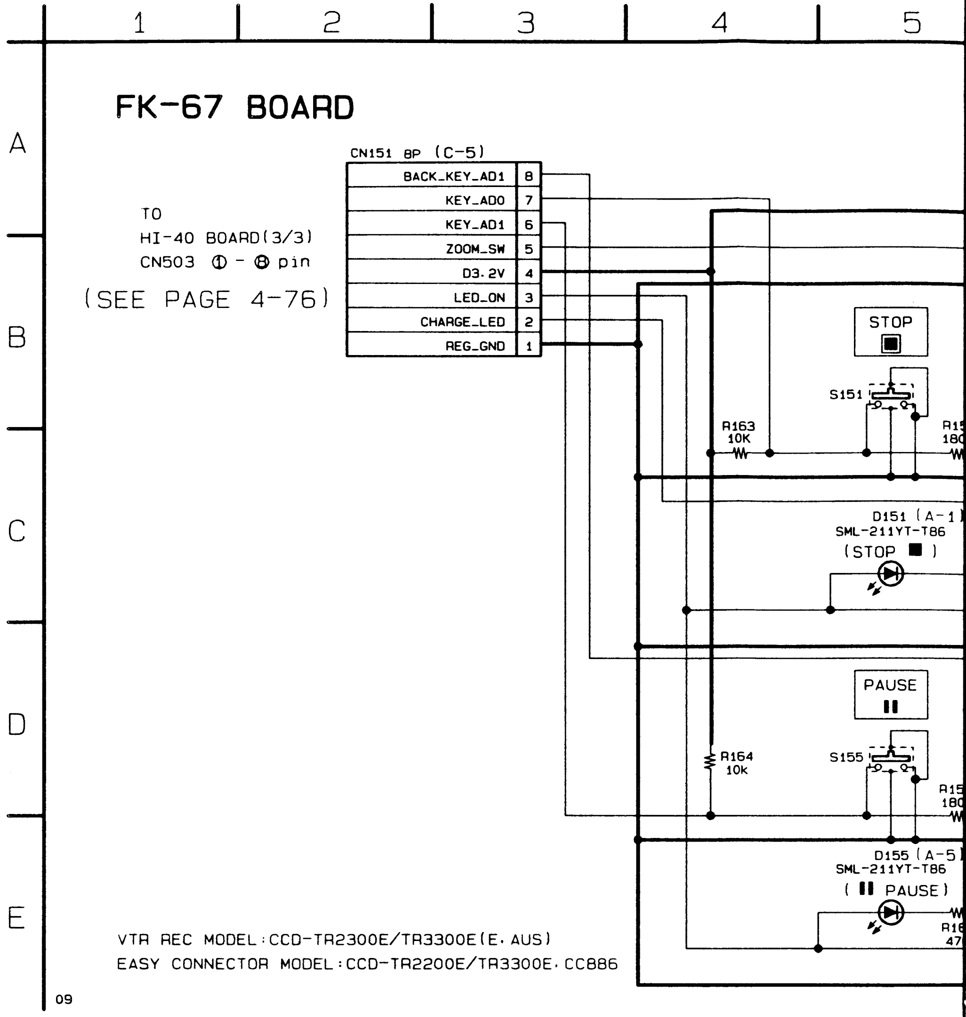

FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)

FK-67 BOARD

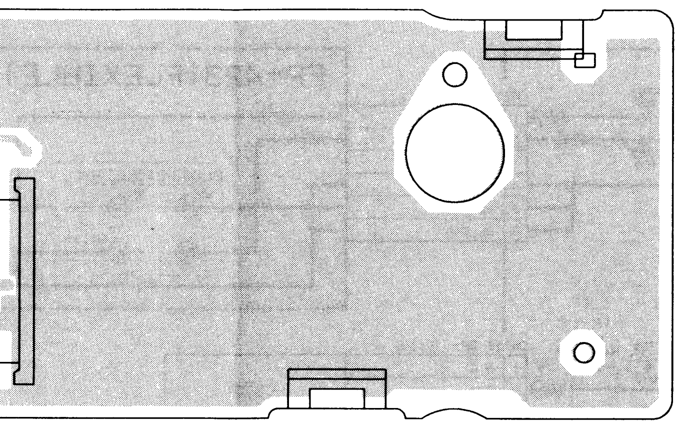
| | |
|---|---|
| CN151 | C-5 |
| D151 | A-1 |
| D152 | A-2 |
| D153 | A-3 |
| D154 | A-4 |
| D155 | A-5 |
| D156 | A-6 |
| D157 | A-6 |
| D158 | B-7 |
| R151 | B-4 |
| R152 | B-4 |
| R153 | B-4 |
| R154 | B-4 |
| R155 | B-4 |
| R156 | B-5 |
| R157 | B-5 |
| R159 | B-5 |
| R160 | B-5 |
| R161 | B-5 |
| R162 | B-5 |
| R163 | B-4 |
| R164 | B-4 |
| RV151 | A-8 |
| S151 | A-1 |
| S152 | A-2 |
| S153 | A-3 |
| S154 | A-4 |
| S155 | A-5 |
| S156 | A-6 |
| S157 | A-6 |
| S158 | B-1 |
| S159 | B-2 |

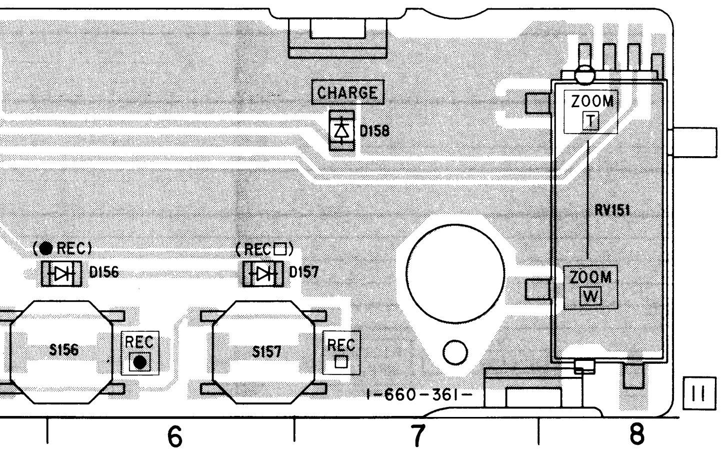
## FK-67 (FUNCTION KEY) SCHEMATIC DIAGRAM

— Ref No. FK-67 BOARD: 3,000 series —


1
2
3
4
5
A
B
C
D
E
FK-67 BOARD
CN151 8P (C-5)
BACK_KEY_AD1 8
KEY_AD0 7
KEY_AD1 6
ZOOM_SW 5
D3.2V 4
LED_ON 3
CHARGE_LED 2
REG_GND 1
TO
HI-40 BOARD(3/3)
CN503 ① - ⑧ pin
(SEE PAGE 4-76)
STOP ■
S151
R163
10K
D151 (A-1)
SML-211YT-T86
(STOP ■)
PAUSE ▮▮
S155
R164
10k
D155 (A-5)
SML-211YT-T86
(▮▮ PAUSE)
09

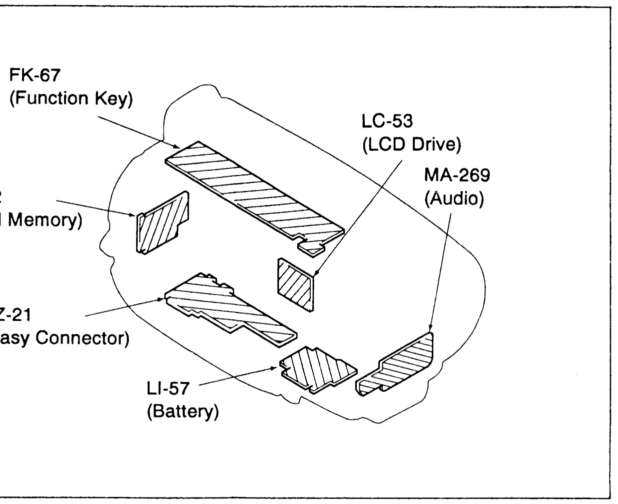
VTR REC MODEL:CCD-TR2300E/TR3300E(E.AUS)
EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E.CC886




CHARGE
D158
ZOOM
T
RV151
ZOOM
W
(● REC)
D156
(REC□)
D157
S156
REC
S157
REC
1-660-361-
11
6
7
8

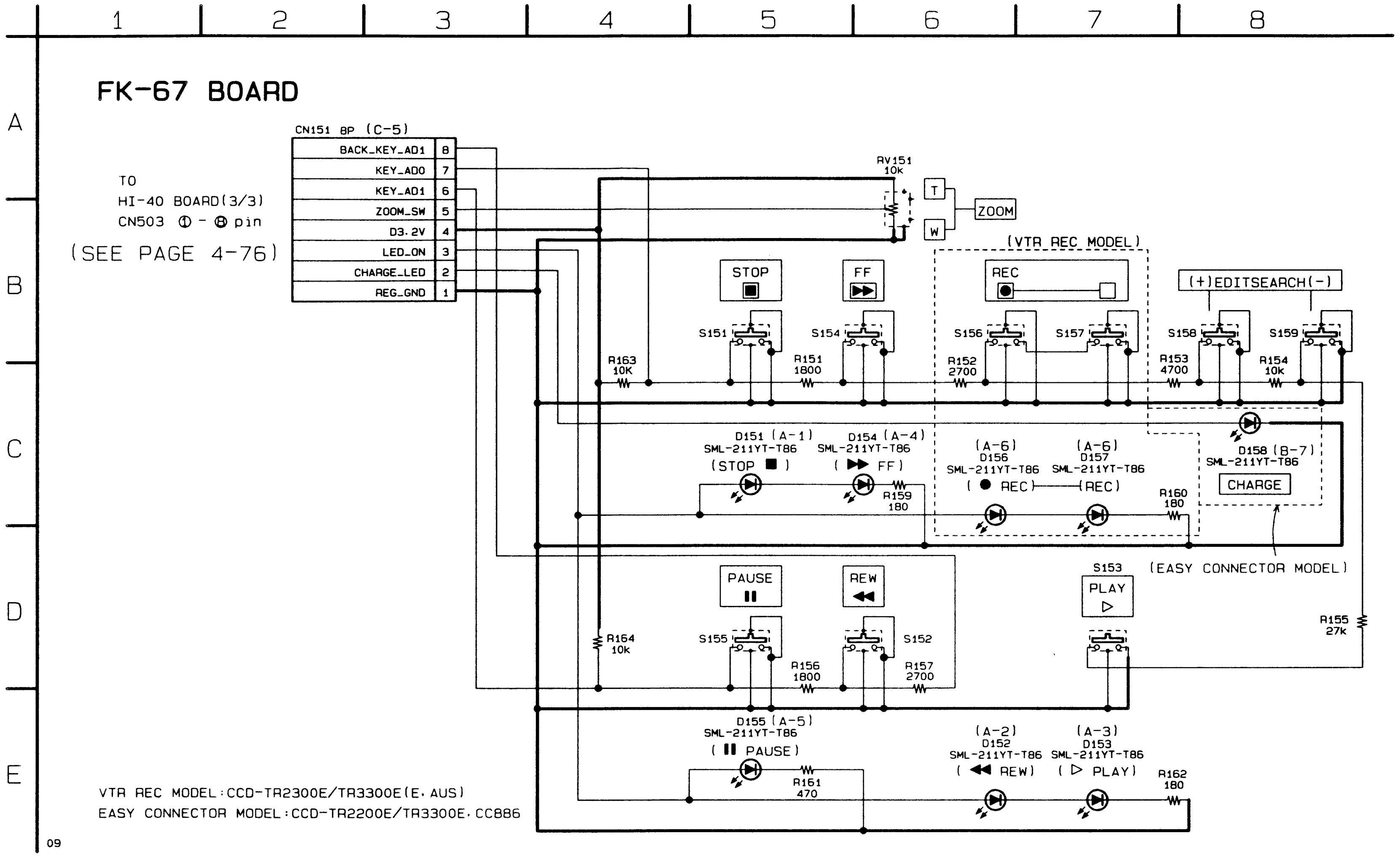
FK-67 BOARD

| | |
|---|---|
| CN151 | C-5 |
| D151 | A-1 |
| D152 | A-2 |
| D153 | A-3 |
| D154 | A-4 |
| D155 | A-5 |
| D156 | A-6 |
| D157 | A-6 |
| D158 | B-7 |
| R151 | B-4 |
| R152 | B-4 |
| R153 | B-4 |
| R154 | B-4 |
| R155 | B-4 |
| R156 | B-5 |
| R157 | B-5 |
| R159 | B-5 |
| R160 | B-5 |
| R161 | B-5 |
| R162 | B-5 |
| R163 | B-4 |
| R164 | B-4 |
| RV151 | A-8 |
| S151 | A-1 |
| S152 | A-2 |
| S153 | A-3 |
| S154 | A-4 |
| S155 | A-5 |
| S156 | A-6 |
| S157 | A-6 |
| S158 | B-1 |
| S159 | B-2 |


FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
Memory)
Z-21
asy Connector)
LI-57
(Battery)

## FK-67 (FUNCTION KEY) SCHEMATIC DIAGRAM

— Ref No. FK-67 BOARD: 3,000 series —

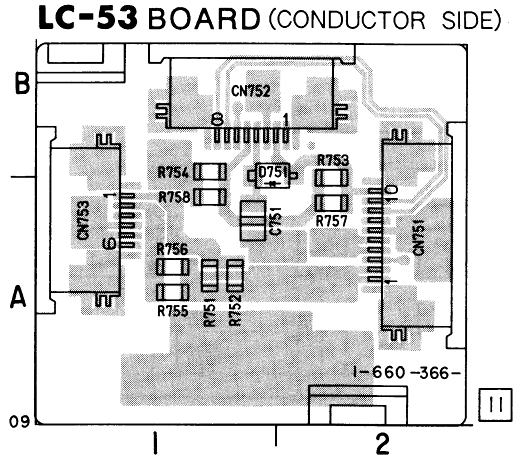

1
2
3
4
5
6
7
8
A
B
C
D
E
FK-67 BOARD
CN151 8P (C-5)
BACK_KEY_AD1 8
KEY_AD0 7
KEY_AD1 6
ZOOM_SW 5
D3.2V 4
LED_ON 3
CHARGE_LED 2
REG_GND 1
TO
HI-40 BOARD(3/3)
CN503 ①-⑧ pin
(SEE PAGE 4-76)
RV151
10k
T
W
ZOOM
(VTR REC MODEL)
STOP
■
FF
▶▶
REC
●
□
(+)EDITSEARCH(-)
S151
S154
S156
S157
S158
S159
R163
10K
R151
1800
R152
2700
R153
4700
R154
10k
D151 (A-1)
SML-211YT-T86
(STOP ■)
D154 (A-4)
SML-211YT-T86
(▶▶ FF)
(A-6)
D156
SML-211YT-T86
(● REC)
(A-6)
D157
SML-211YT-T86
(REC)
D158 (B-7)
SML-211YT-T86
CHARGE
R159
180
R160
180
S153
PLAY
▷
(EASY CONNECTOR MODEL)
PAUSE
▮▮
REW
◀◀
S155
S152
R164
10k
R156
1800
R157
2700
R155
27k
D155 (A-5)
SML-211YT-T86
(▮▮ PAUSE)
R161
470
(A-2)
D152
SML-211YT-T86
(◀◀ REW)
(A-3)
D153
SML-211YT-T86
(▷ PLAY)
R162
180
09

VTR REC MODEL : CCD-TR2300E/TR3300E(E, AUS)
EASY CONNECTOR MODEL : CCD-TR2200E/TR3300E, CCB86

## LC-53 (LCD DRIVE) PRINTED WIRING BOARD

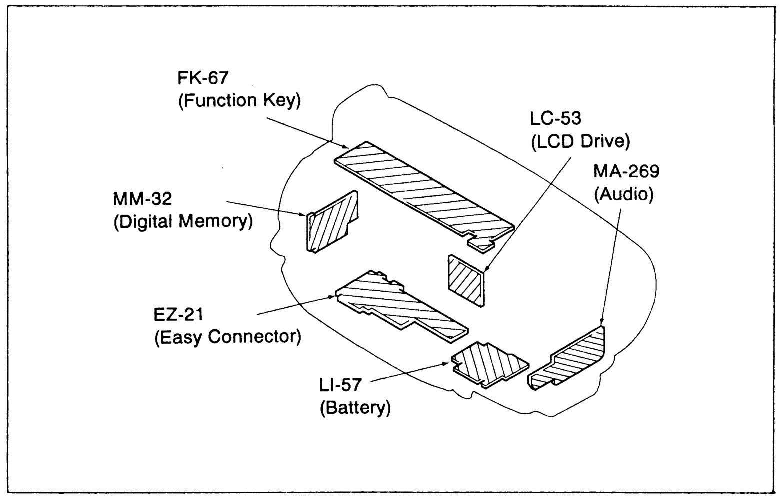
— Ref No. LC-53 BOARD: 7,000 series —

| LC-53 BOARD | |
|---|---|
| C751 | A-1 |
| CN751 | A-2 |
| CN752 | B-1 |
| CN753 | A-1 |
| D751 | B-1 |
| R751 | A-1 |
| R752 | A-1 |
| R753 | B-2 |
| R754 | B-1 |
| R755 | A-1 |


LC-53 BOARD (CONDUCTOR SIDE)
B
A
CN752
CN753
CN751
8
1
6
1
10
R754
R758
D751
R753
R757
C751
R756
R755
R751
R752
1-660-366-
11
09
1
2

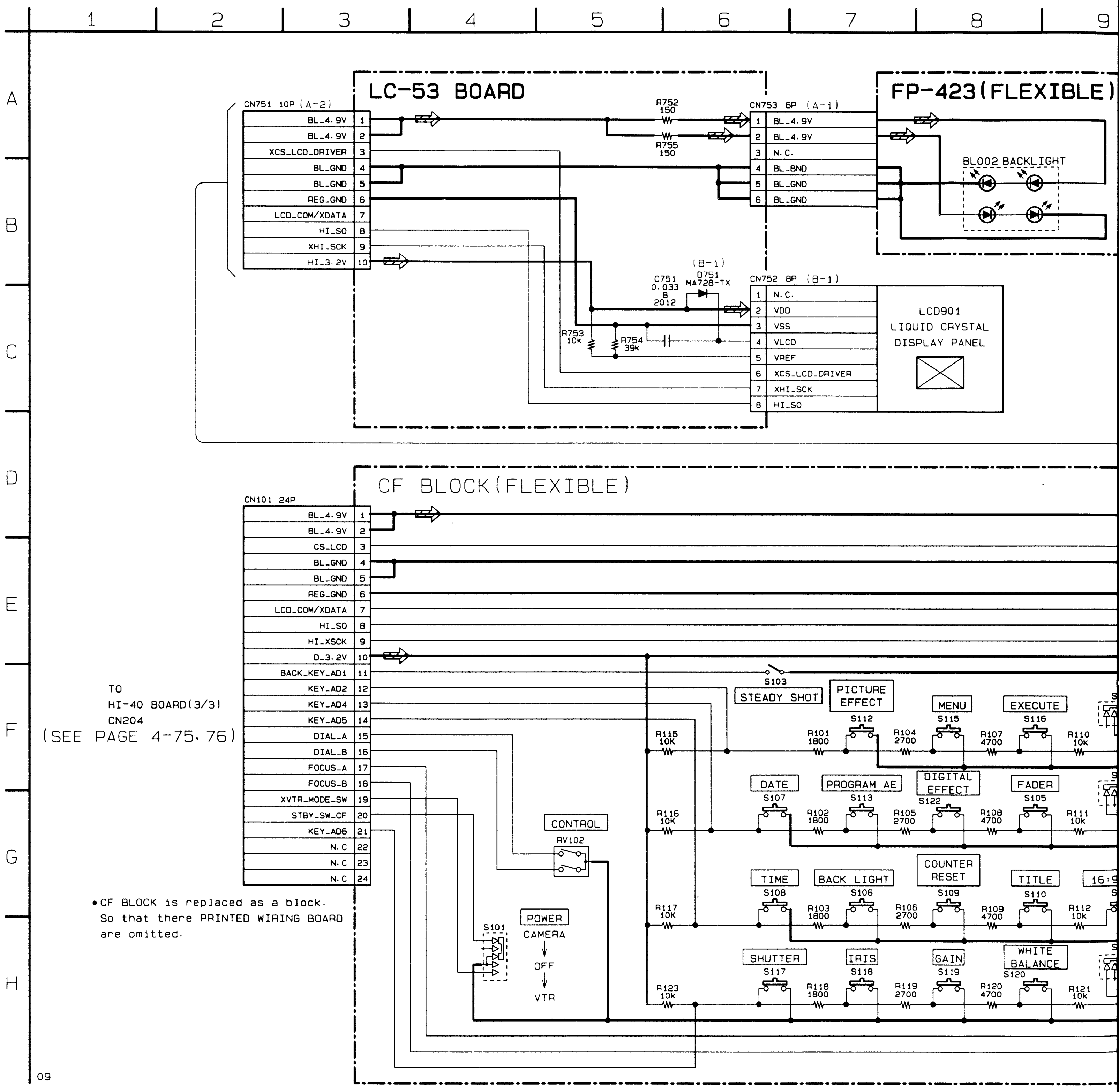
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.


FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)

## LC-53 (LCD DRIVE), CF BLOCK (FUNCTION KEY) SCHEMATIC DIAGRAMS

— Ref No. LC-53 BOARD and CF BLOCK FLEXIBLE BOARD: 7,000 series —


1
2
3
4
5
6
7
8
9
A
B
C
D
E
F
G
H
LC-53 BOARD
FP-423(FLEXIBLE)
CN751 10P (A-2)
BL_4.9V
BL_4.9V
XCS_LCD_DRIVER
BL_GND
BL_GND
REG_GND
LCD_COM/XDATA
HI_SO
XHI_SCK
HI_3.2V
R752 150
R755 150
CN753 6P (A-1)
BL_4.9V
BL_4.9V
N.C.
BL_GND
BL_GND
BL_GND
BL002 BACKLIGHT
(B-1)
C751 0.033 B 2012
D751 MA728-TX
R753 10k
R754 39k
CN752 8P (B-1)
N.C.
VDD
VSS
VLCD
VREF
XCS_LCD_DRIVER
XHI_SCK
HI_SO
LCD901 LIQUID CRYSTAL DISPLAY PANEL
CF BLOCK (FLEXIBLE)
CN101 24P
BL_4.9V
BL_4.9V
CS_LCD
BL_GND
BL_GND
REG_GND
LCD_COM/XDATA
HI_SO
HI_XSCK
D_3.2V
BACK_KEY_AD1
KEY_AD2
KEY_AD4
KEY_AD5
DIAL_A
DIAL_B
FOCUS_A
FOCUS_B
XVTR_MODE_SW
STBY_SW_CF
KEY_AD6
N.C
N.C
N.C
TO HI-40 BOARD(3/3) CN204
(SEE PAGE 4-75, 76)
CONTROL
RV102
POWER
CAMERA
OFF
VTR
S101
S103
STEADY SHOT
PICTURE EFFECT
S112
MENU
S115
EXECUTE
S116
R115 10K
R101 1800
R104 2700
R107 4700
R110 10k
DATE
S107
PROGRAM AE
S113
DIGITAL EFFECT
S122
FADER
S105
R116 10K
R102 1800
R105 2700
R108 4700
R111 10k
TIME
S108
BACK LIGHT
S106
COUNTER RESET
S109
TITLE
S110
16:9
R117 10K
R103 1800
R106 2700
R109 4700
R112 10k
SHUTTER
S117
IRIS
S118
GAIN
S119
WHITE BALANCE
S120
R123 10K
R118 1800
R119 2700
R120 4700
R121 10k
09

•CF BLOCK is replaced as a block. So that there PRINTED WIRING BOARD are omitted.

RD

R SIDE)

366-

II

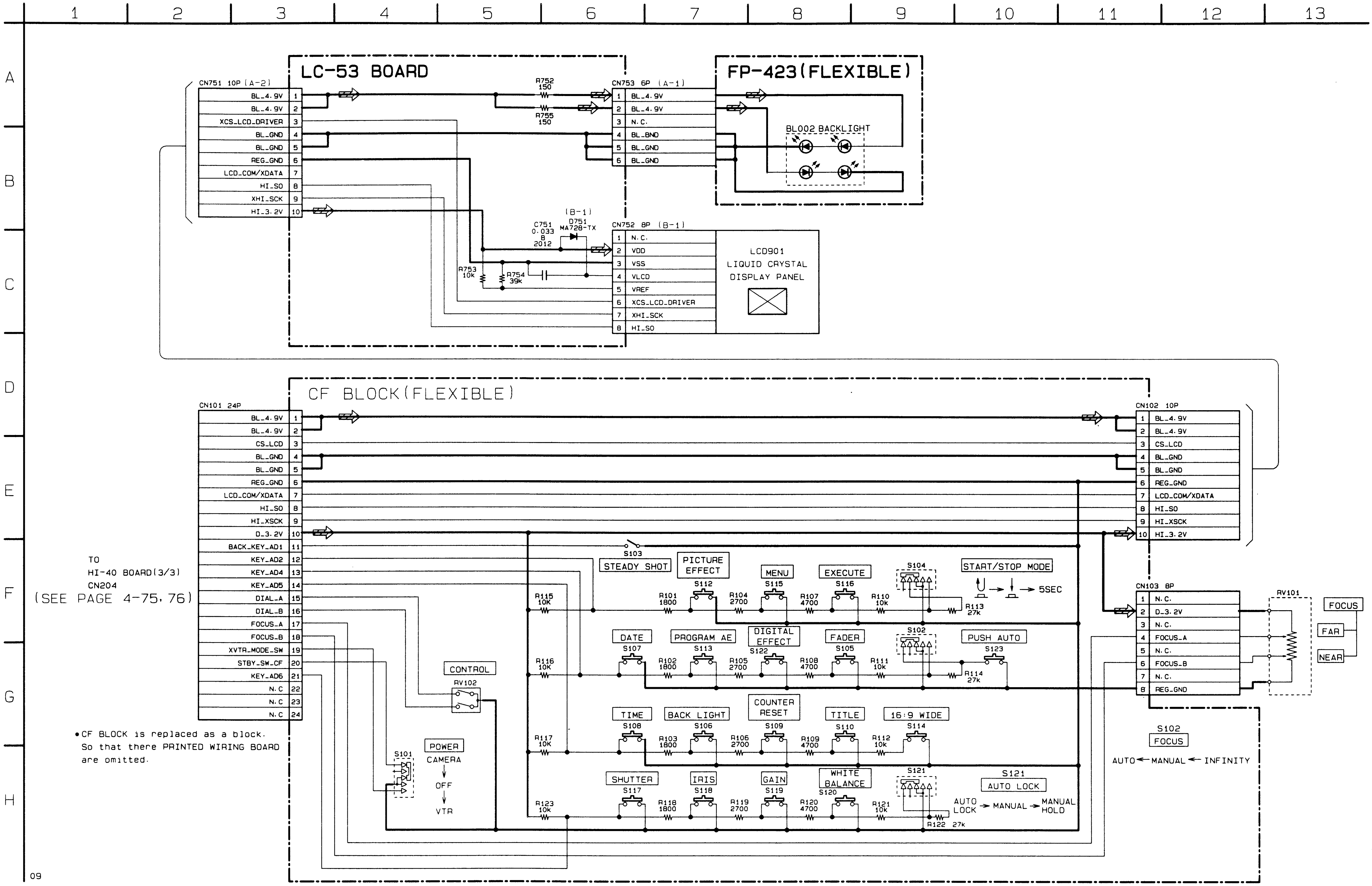
the patterns
diagram.

in this model is

e)
-269
udio)

## LC-53 (LCD DRIVE), CF BLOCK (FUNCTION KEY) SCHEMATIC DIAGRAMS

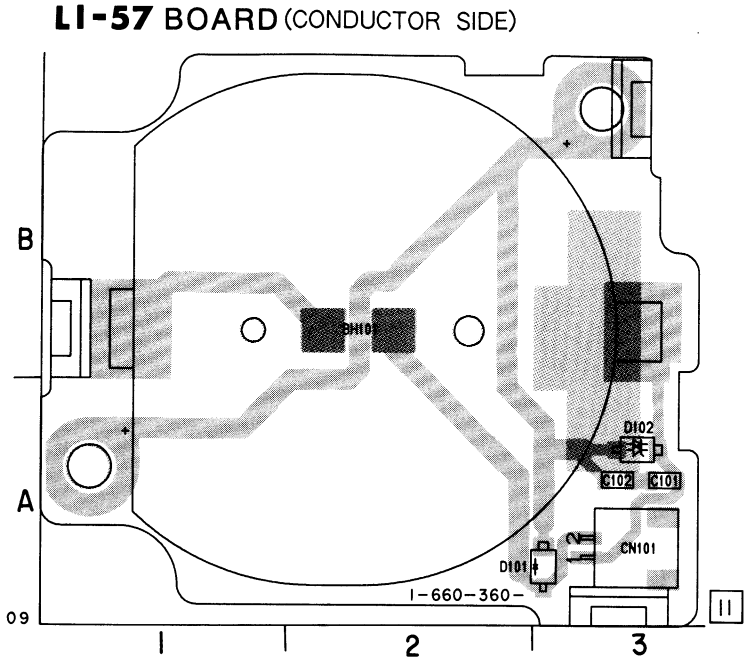
— Ref No. LC-53 BOARD and CF BLOCK FLEXIBLE BOARD: 7,000 series —



1 2 3 4 5 6 7 8 9 10 11 12 13
A B C D E F G H
LC-53 BOARD
CN751 10P (A-2)
BL_4.9V
BL_4.9V
XCS_LCD_DRIVER
BL_GND
BL_GND
REG_GND
LCD_COM/XDATA
HI_SO
XHI_SCK
HI_3.2V
R752 150
R755 150
CN753 6P (A-1)
BL_4.9V
BL_4.9V
N.C.
BL_BND
BL_GND
BL_GND
FP-423 (FLEXIBLE)
BL002 BACKLIGHT
(B-1)
C751 0.033 B 2012
D751 MA728-TX
R753 10k
R754 39k
CN752 8P (B-1)
N.C.
VDD
VSS
VLCD
VREF
XCS_LCD_DRIVER
XHI_SCK
HI_SO
LCD901
LIQUID CRYSTAL
DISPLAY PANEL
CF BLOCK (FLEXIBLE)
CN101 24P
BL_4.9V
BL_4.9V
CS_LCD
BL_GND
BL_GND
REG_GND
LCD_COM/XDATA
HI_SO
HI_XSCK
D_3.2V
BACK_KEY_AD1
KEY_AD2
KEY_AD4
KEY_AD5
DIAL_A
DIAL_B
FOCUS_A
FOCUS_B
XVTR_MODE_SW
STBY_SW_CF
KEY_AD6
N.C
N.C
N.C
TO
HI-40 BOARD (3/3)
CN204
(SEE PAGE 4-75, 76)
CN102 10P
BL_4.9V
BL_4.9V
CS_LCD
BL_GND
BL_GND
REG_GND
LCD_COM/XDATA
HI_SO
HI_XSCK
HI_3.2V
S103
STEADY SHOT
PICTURE EFFECT
S112
MENU
S115
EXECUTE
S116
S104
START/STOP MODE
5SEC
R115 10k
R101 1800
R104 2700
R107 4700
R110 10k
R113 27k
DATE
S107
PROGRAM AE
S113
DIGITAL EFFECT
S122
FADER
S105
S102
PUSH AUTO
S123
R116 10k
R102 1800
R105 2700
R108 4700
R111 10k
R114 27k
CONTROL
RV102
TIME
S108
BACK LIGHT
S106
COUNTER RESET
S109
TITLE
S110
16:9 WIDE
S114
R117 10k
R103 1800
R106 2700
R109 4700
R112 10k
S101
POWER
CAMERA
OFF
VTR
SHUTTER
S117
IRIS
S118
GAIN
S119
WHITE BALANCE
S120
S121
AUTO LOCK
AUTO LOCK → MANUAL → MANUAL HOLD
R123 10k
R118 1800
R119 2700
R120 4700
R121 10k
R122 27k
CN103 8P
N.C.
D_3.2V
N.C.
FOCUS_A
N.C.
FOCUS_B
N.C.
REG_GND
RV101
FOCUS
FAR
NEAR
S102
FOCUS
AUTO ← MANUAL ← INFINITY
•CF BLOCK is replaced as a block.
So that there PRINTED WIRING BOARD are omitted.
09

## LI-57 (BATTERY) PRINTED WIRING BOARD

— Ref No. LI-57 BOARD: 3,000 series —


LI-57 BOARD (CONDUCTOR SIDE)
BH101
D102
C102
C101
CN101
D101
1-660-360-
11
A
B
09
1
2
3

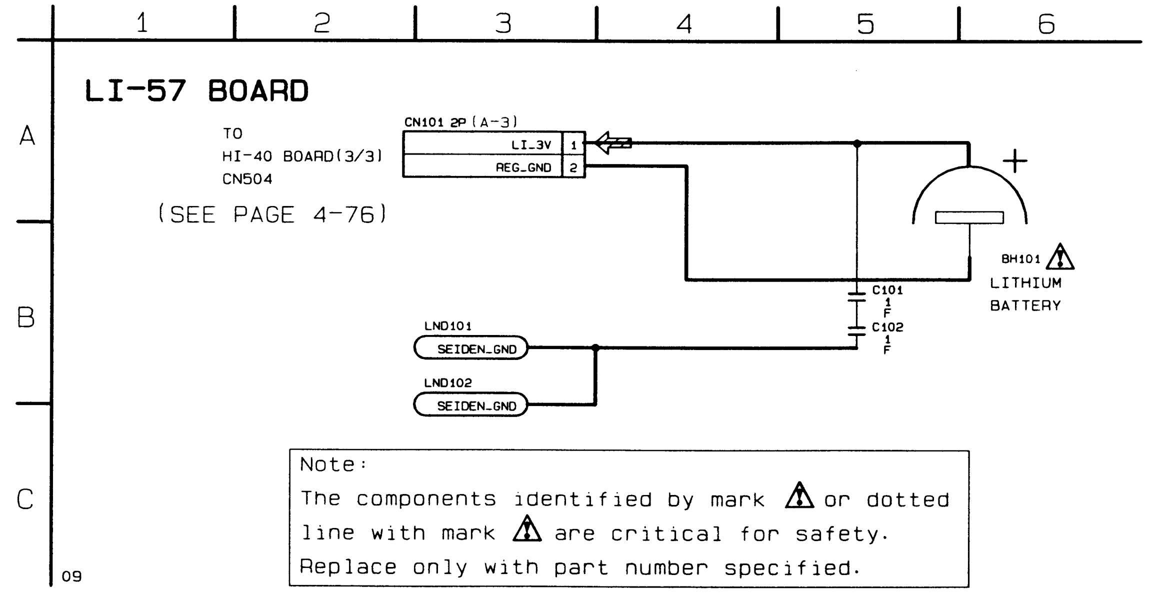
| LI-57 BOARD | |
|---|---|
| BH101 | B-2 |
| C101 | A-3 |
| C102 | A-3 |
| CN101 | A-3 |

- ▨ : pattern from the side which enables seeing.
- ░ : pattern of the rear side.

There are few cases that the part isn't mounted in this model is printed on this diagram.

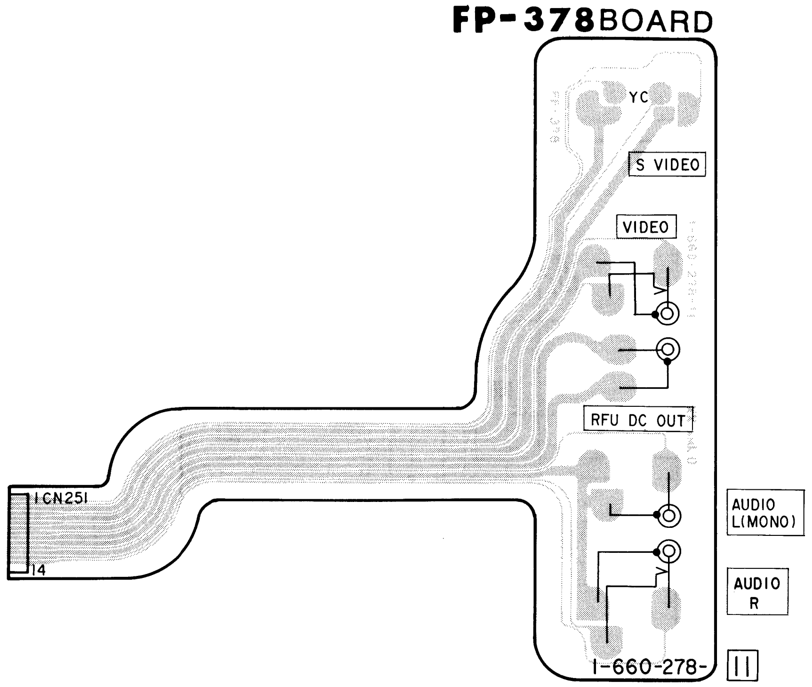
## LI-57 (BATTERY) SCHEMATIC DIAGRAM

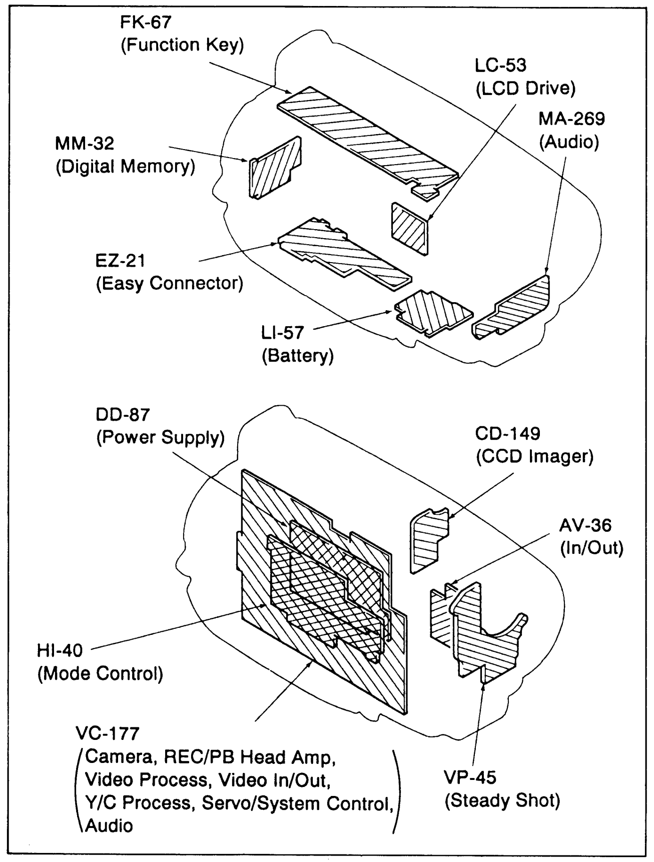
— Ref No. LI-57 BOARD: 3,000 series —


1
2
3
4
5
6
A
B
C
LI-57 BOARD
TO
HI-40 BOARD(3/3)
CN504
(SEE PAGE 4-76)
CN101 2P (A-3)
LI_3V
REG_GND
1
2
+
BH101
LITHIUM
BATTERY
C101
1
F
C102
1
F
LND101
SEIDEN_GND
LND102
SEIDEN_GND
09

Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

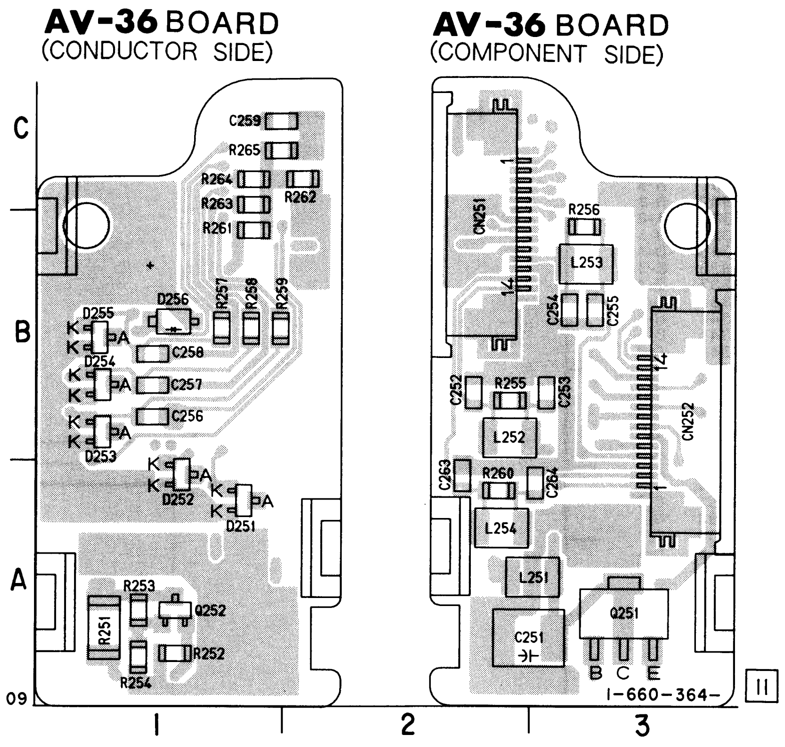
## FP-378 (JACK) FLEXIBLE BOARD


FP-378 BOARD
YC
S VIDEO
VIDEO
RFU DC OUT
AUDIO
L(MONO)
AUDIO
R
1CN251
14
1-660-278-
11


FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)
DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
(Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio)
VP-45
(Steady Shot)

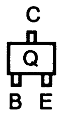
## AV-36 (IN/OUT) PRINTED WIRING BOARD

— Ref No. AV-36 BOARD: 3,000 series —

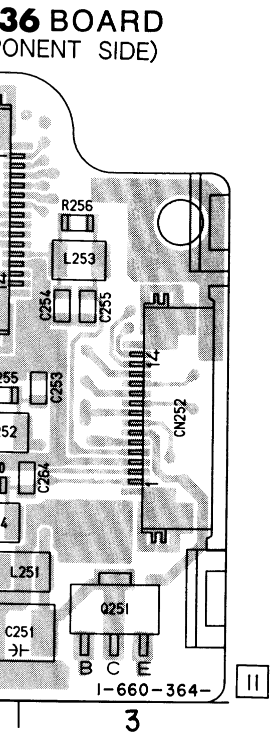

AV-36 BOARD
(CONDUCTOR SIDE)
AV-36 BOARD
(COMPONENT SIDE)
C
B
A
09
1
2
3
C259
R265
R264
R263
R262
R261
D256
R257
R258
R259
D255
D254
D253
D252
D251
C258
C257
C256
R253
R251
Q252
R254
R252
CN251
R256
L253
C254
C255
C252
R255
C253
L252
CN252
C263
R260
C264
L254
L251
C251
Q251
B C E
1-660-364-
11

| AV-36 BOARD | |
|---|---|
| C251 | A-2 |
| C252 | B-2 |
| C253 | B-3 |
| C254 | B-3 |
| C255 | B-3 |
| C263 | A-2 |
| C264 | A-3 |
| CN251 | B-2 |
| CN252 | B-3 |
| D251 | A-1 |
| D252 | A-1 |
| D253 | B-1 |
| D254 | B-1 |
| D255 | B-1 |
| D256 | B-1 |
| L251 | A-3 |
| L252 | B-2 |
| L253 | B-3 |
| L254 | A-2 |
| Q251 | A-3 |
| Q252 | A-1 |
| R251 | A-1 |
| R252 | A-1 |
| R253 | A-1 |
| R254 | A-1 |
| R255 | B-2 |
| R256 | B-3 |
| R257 | B-1 |
| R258 | B-1 |
| R259 | B-2 |
| R260 | A-2 |
| R261 | B-1 |
| R262 | C-2 |
| R263 | C-1 |
| R264 | C-1 |

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



There are few cases that the part isn't mounted in this model is printed on this diagram.


36 BOARD
ONENT SIDE)
R256
L253
C254
C255
C253
CN252
C264
L251
Q251
C251
B C E
1-660-364-
II
3

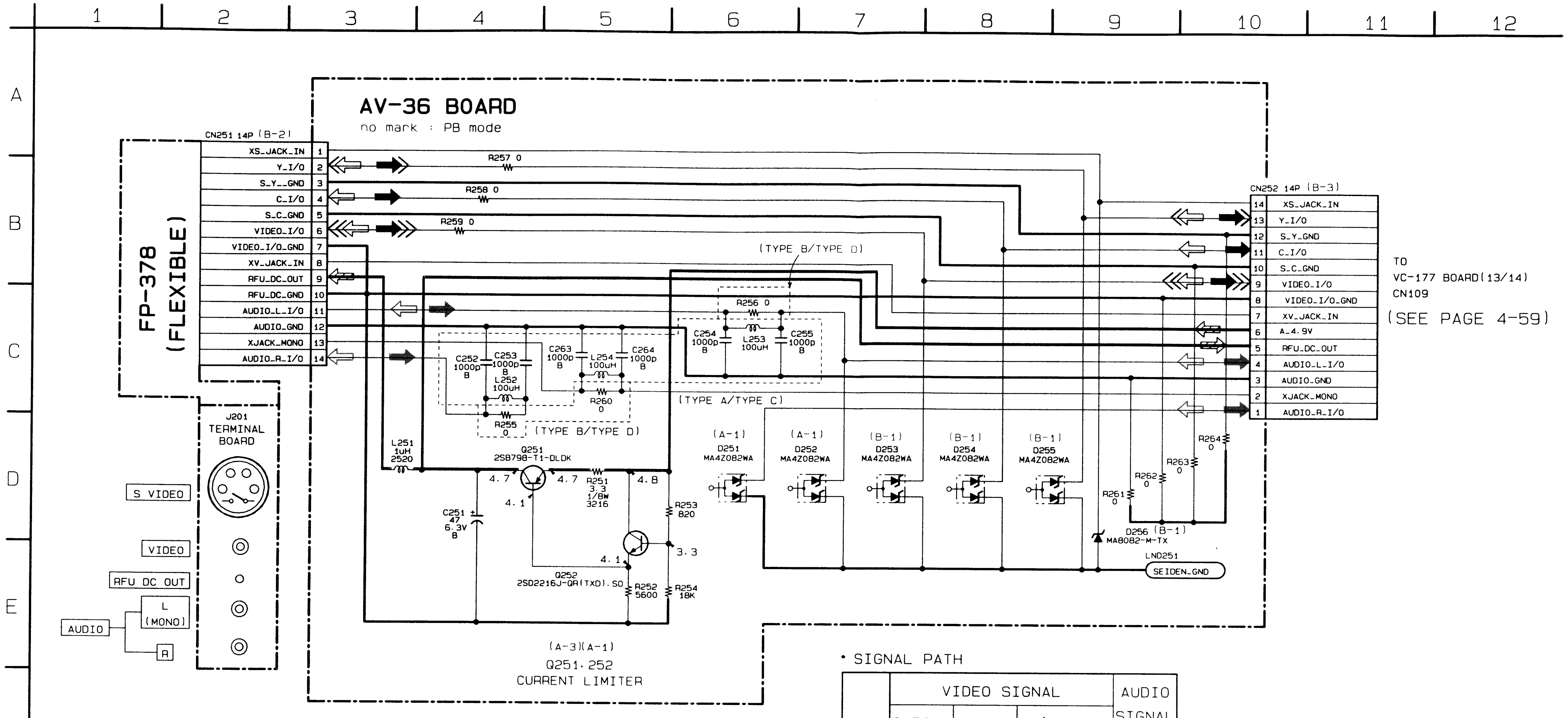
| AV-36 | BOARD |
|---|---|
| C251 | A-2 |
| C252 | B-2 |
| C253 | B-3 |
| C254 | B-3 |
| C255 | B-3 |
| C263 | A-2 |
| C264 | A-3 |
| CN251 | B-2 |
| CN252 | B-3 |
| D251 | A-1 |
| D252 | A-1 |
| D253 | B-1 |
| D254 | B-1 |
| D255 | B-1 |
| D256 | B-1 |
| L251 | A-3 |
| L252 | B-2 |
| L253 | B-3 |
| L254 | A-2 |
| Q251 | A-3 |
| Q252 | A-1 |
| R251 | A-1 |
| R252 | A-1 |
| R253 | A-1 |
| R254 | A-1 |
| R255 | B-2 |
| R256 | B-3 |
| R257 | B-1 |
| R258 | B-1 |
| R259 | B-2 |
| R260 | A-2 |
| R261 | B-1 |
| R262 | C-2 |
| R263 | C-1 |
| R264 | C-1 |

e patterns
gram.

this model is

## AV-36 (IN/OUT), FP-378 (JACK) SCHEMATIC DIAGRAMS

— Ref No. AV-36 BOARD and FP-378 FLEXIBLE BOARD: 3,000 series —


1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
AV-36 BOARD
no mark : PB mode
FP-378 (FLEXIBLE)
CN251 14P (B-2)
XS_JACK_IN 1
Y_I/O 2
S_Y_GND 3
C_I/O 4
S_C_GND 5
VIDEO_I/O 6
VIDEO_I/O_GND 7
XV_JACK_IN 8
RFU_DC_OUT 9
RFU_DC_GND 10
AUDIO_L_I/O 11
AUDIO_GND 12
XJACK_MONO 13
AUDIO_R_I/O 14
R257 0
R258 0
R259 0
(TYPE B/TYPE D)
R256 0
C254 1000p B
L253 100uH
C255 1000p B
(TYPE A/TYPE C)
C252 1000p B
C253 1000p B
L252 100uH
C263 1000p B
L254 100uH
C264 1000p B
R260 0
R255 0
(TYPE B/TYPE D)
J201 TERMINAL BOARD
S VIDEO
VIDEO
RFU DC OUT
AUDIO
L (MONO)
R
L251 1uH 2520
Q251 2SB798-T1-DLDK
4.7
4.7
4.1
R251 3.3 1/8W 3216
4.8
C251 47 6.3V B
R253 820
3.3
4.1
Q252 2SD2216J-QR(TXD).SO
R252 5600
R254 18K
(A-3)(A-1)
Q251, 252
CURRENT LIMITER
(A-1) D251 MA4Z082WA
(A-1) D252 MA4Z082WA
(B-1) D253 MA4Z082WA
(B-1) D254 MA4Z082WA
(B-1) D255 MA4Z082WA
R261 0
R262 0
R263 0
R264 0
D256 (B-1) MA8082-M-TX
LND251
SEIDEN_GND
CN252 14P (B-3)
14 XS_JACK_IN
13 Y_I/O
12 S_Y_GND
11 C_I/O
10 S_C_GND
9 VIDEO_I/O
8 VIDEO_I/O_GND
7 XV_JACK_IN
6 A_4.9V
5 RFU_DC_OUT
4 AUDIO_L_I/O
3 AUDIO_GND
2 XJACK_MONO
1 AUDIO_R_I/O
TO VC-177 BOARD(13/14) CN109
(SEE PAGE 4-59)

TYPE A/TYPE C:CCD-TR2200E/TR3300E(AEP, UK), CC886
TYPE B/TYPE D:CCD-TR2300E/TR3300E(E, AUS)

• SIGNAL PATH

| | VIDEO SIGNAL | | | AUDIO SIGNAL |
|---|---|---|---|---|
| | CHROMA | Y | Y/CHROMA | |
| REC | ➡ | ➡» | ➡»» | ➡ |
| PB | ⇨ | ⇨» | ⇨»» | ⇨ |

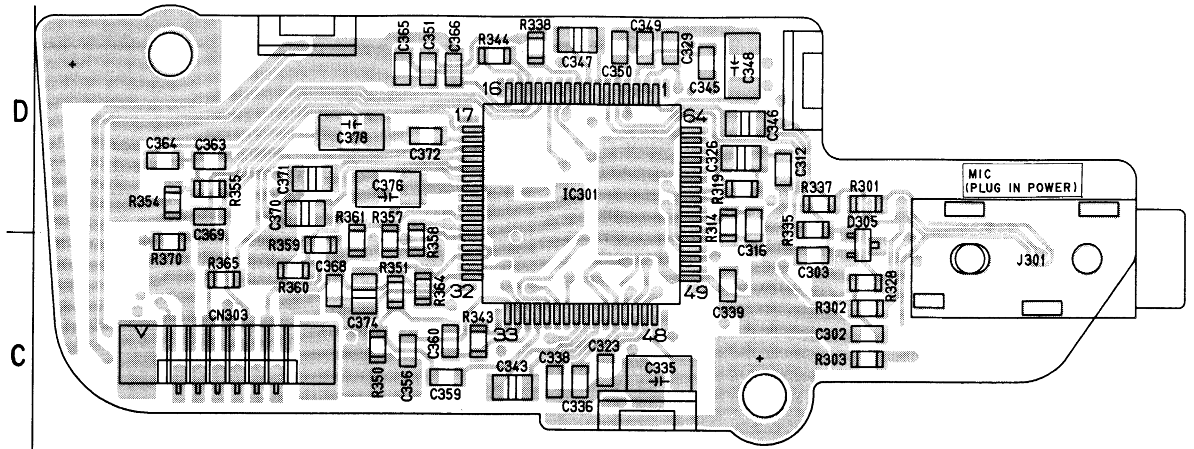
F

09

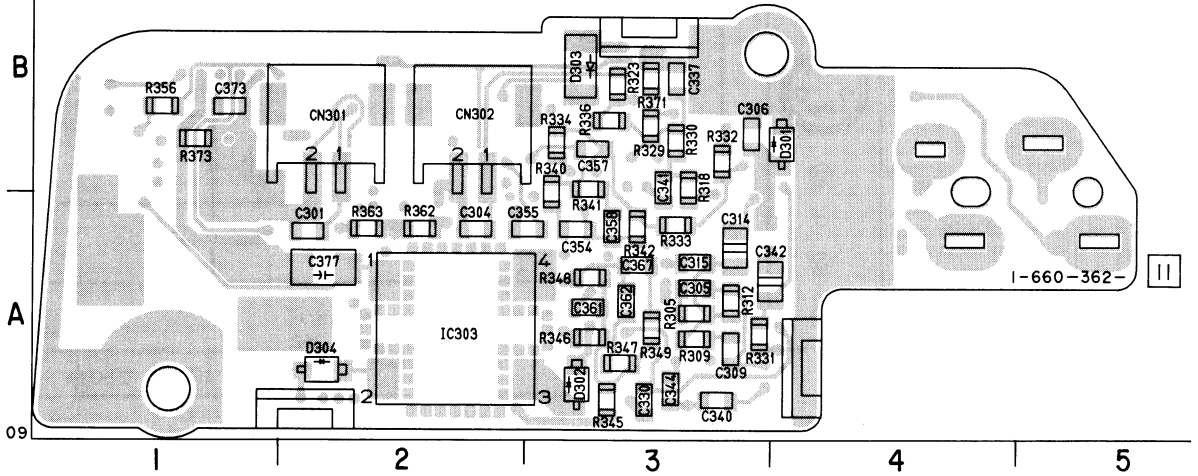
## MA-269 (AUDIO) PRINTED WIRING BOARD

— Ref No. MA-269 BOARD: 4,000 series —

### MA-269 BOARD (CONDUCTOR SIDE)


D
C
IC301
J301
CN303
MIC (PLUG IN POWER)
C365 C351 C366 R344 R338 C349 C347 C350 C329 C348 C345 C346
C364 C363 R354 R355 C369 R370 R365 C378 C372 C376 C371 C370
R361 R357 R359 C368 R360 R351 R364 R358 C374 R343 C338 C323 C335
C360 C356 R350 C359 C343 C336 C339 C326 R319 R314 C316 C312
R337 R301 D305 R335 C303 R302 C302 R303 R328
16 17 32 33 48 49 64

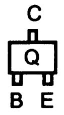
### MA-269 BOARD (COMPONENT SIDE)


B
A
09
1
2
3
4
5
CN301
CN302
IC303
R356 C373 R373
R334 R336 D303 R323 R371 C337 R329 R330 R332 C306 D301 R340 C357 R318
C301 R363 R362 C304 C355 R341 C354 C358 R342 C367 R333 C314 C342
C377 R348 C361 C362 C315 C305 R305 R312 R346 R347 R349 R309 R331 C309
D304 D302 C339 C344 R345 C340
1-660-362-
11

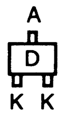
| | | | |
|---|---|---|---|
| C302 | C-4 | R303 | C-4 |
| C303 | C-4 | R312 | A-3 |
| C314 | A-3 | R314 | D-3 |
| C315 | A-3 | R318 | B-3 |
| C323 | C-3 | R319 | D-3 |
| C326 | D-3 | R323 | B-3 |
| C329 | D-3 | R328 | C-4 |
| C330 | A-3 | R330 | B-3 |
| C335 | C-3 | R331 | A-3 |
| C336 | C-3 | R332 | B-3 |
| C337 | B-3 | R333 | A-3 |
| C338 | C-3 | R334 | B-3 |
| C339 | C-3 | R335 | D-4 |
| C340 | C-3 | R336 | B-3 |
| C341 | C-3 | R337 | D-4 |
| C342 | A-4 | R338 | D-3 |
| C343 | C-2 | R340 | B-3 |
| C344 | A-3 | R341 | B-3 |
| C345 | D-3 | R342 | A-3 |
| C346 | D-3 | R343 | C-2 |
| C347 | D-3 | R344 | D-2 |
| C348 | D-3 | R345 | A-3 |
| C349 | D-3 | R346 | A-3 |
| C351 | D-2 | R347 | A-3 |
| C354 | A-3 | R348 | A-3 |
| C355 | A-3 | R349 | A-3 |
| C356 | C-2 | R350 | C-2 |
| C357 | B-3 | R351 | C-2 |
| C358 | A-3 | R354 | D-1 |
| C359 | C-2 | R355 | D-1 |
| C360 | C-2 | R356 | B-1 |
| C361 | A-3 | R357 | C-2 |
| C362 | A-3 | R358 | C-2 |
| C363 | D-1 | R362 | A-2 |
| C364 | D-1 | R363 | A-2 |
| C365 | D-2 | R364 | C-2 |
| C366 | D-2 | R365 | C-1 |
| C367 | A-3 | R370 | C-1 |
| C368 | C-2 | R371 | B-3 |
| C369 | D-1 | R373 | B-1 |
| C370 | D-2 | | |
| C371 | D-2 | | |
| C372 | D-2 | | |
| C376 | D-2 | | |
| C377 | A-2 | | |
| C378 | D-2 | | |
| | | | |
| CN301 | B-2 | | |
| CN302 | B-2 | | |
| CN303 | C-1 | | |
| | | | |
| D303 | B-3 | | |
| D304 | A-2 | | |
| D305 | C-4 | | |
| | | | |
| IC301 | D-3 | | |
| IC303 | A-2 | | |
| | | | |
| J301 | C-5 | | |
| | | | |
| R301 | D-4 | | |
| R302 | C-4 | | |

MA-269 BOARD

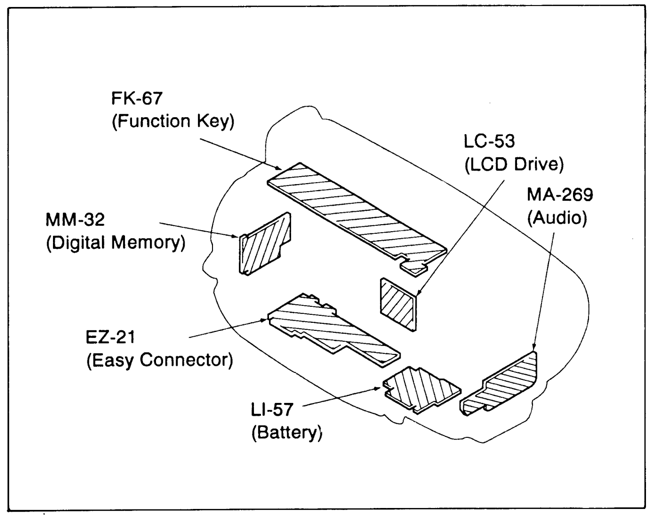
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



- Chip diode

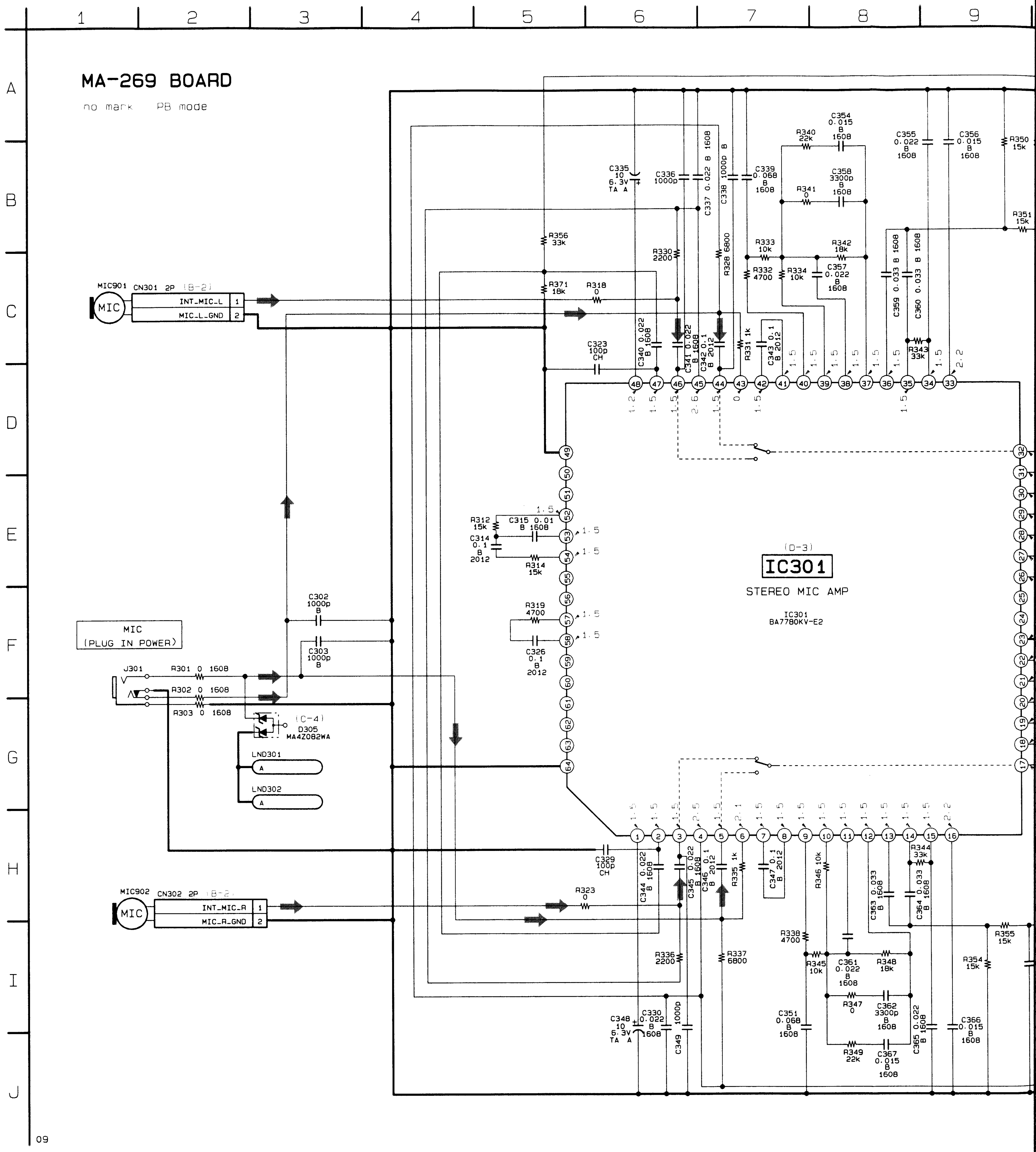


There are few cases that the part isn't mounted in this model is printed on this diagram.


FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)

## MA-269 (AUDIO) SCHEMATIC DIAGRAM

— Ref No. MA-269 BOARD: 4,000 series —

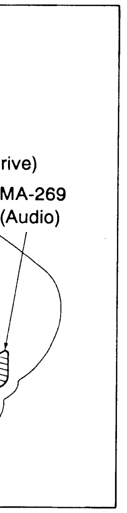

1 2 3 4 5 6 7 8 9
A B C D E F G H I J
MA-269 BOARD
no mark PB mode
MIC901 CN301 2P (B-2)
INT_MIC_L
MIC_L_GND
MIC
(PLUG IN POWER)
J301
R301 0 1608
R302 0 1608
R303 0 1608
(C-4) D305 MA4Z082WA
LND301
LND302
MIC902 CN302 2P (B-2)
INT_MIC_R
MIC_R_GND
(D-3)
IC301
STEREO MIC AMP
IC301 BA7780KV-E2
C302 1000p B
C303 1000p B
R312 15k
C315 0.01 B 1608
C314 0.1 B 2012
R314 15k
R319 4700
C326 0.1 B 2012
R356 33k
R371 18k
R318 0
C323 100p CH
C335 10 6.3V TA A
C336 1000p
C337 0.022 B 1608
C338 1000p B
C339 0.068 B 1608
R340 22k
C354 0.015 B 1608
C358 3300p B 1608
R341 0
C355 0.022 B 1608
C356 0.015 B 1608
R350 15k
R351 15k
R330 2200
R328 6800
R333 10k
R332 4700
R334 10k
C357 0.022 B 1608
R342 18k
C359 0.033 B 1608
C360 0.033 B 1608
R343 33k
C340 0.022 B 1608
C341 0.022 B 1608
C342 0.1 B 2012
R331 1k
C343 0.1 B 2012
C329 100p CH
C344 0.022 B 1608
C345 0.022 B 1608
C346 0.1 B 2012
R335 1k
C347 0.1 B 2012
R346 10k
C363 0.033 B 1608
C364 0.033 B 1608
R344 33k
R323 0
R338 4700
R336 2200
R337 6800
R345 10k
C361 0.022 B 1608
R348 18k
R347 0
C362 3300p B 1608
C348 10 6.3V TA A
C330 0.022 B 1608
C349 1000p
C351 0.068 B 1608
R349 22k
C367 0.015 B 1608
C365 0.022 B 1608
C366 0.015 B 1608
R354 15k
R355 15k
09

# MA-269 (AUDIO) SCHEMATIC DIAGRAM

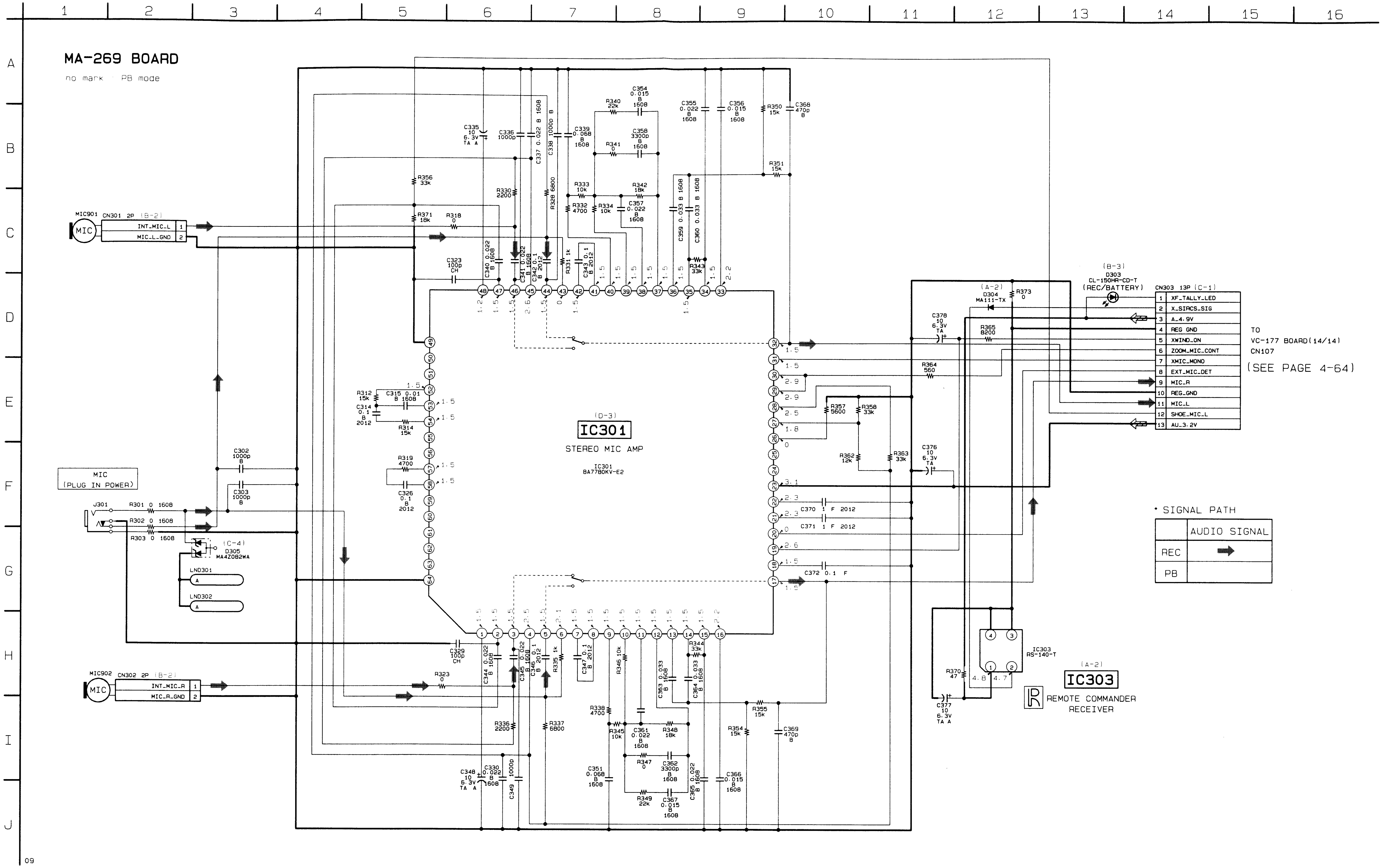
— Ref No. MA-269 BOARD: 4,000 series —

MA-269 BOARD

| | |
|---|---|
| C302 | C-4 |
| C303 | C-4 |
| C314 | A-3 |
| C315 | A-3 |
| C323 | C-3 |
| C326 | D-3 |
| C329 | D-3 |
| C330 | A-3 |
| C335 | C-3 |
| C336 | C-3 |
| C337 | B-3 |
| C338 | C-3 |
| C339 | C-3 |
| C340 | C-3 |
| C341 | C-3 |
| C342 | A-4 |
| C343 | C-2 |
| C344 | A-3 |
| C345 | D-3 |
| C346 | D-3 |
| C347 | D-3 |
| C348 | D-3 |
| C349 | D-3 |
| C351 | D-2 |
| C354 | A-3 |
| C355 | A-3 |
| C356 | C-2 |
| C357 | B-3 |
| C358 | A-3 |
| C359 | C-2 |
| C360 | C-2 |
| C361 | A-3 |
| C362 | A-3 |
| C363 | D-1 |
| C364 | D-1 |
| C365 | D-2 |
| C366 | D-2 |
| C367 | A-3 |
| C368 | C-2 |
| C369 | D-1 |
| C370 | D-2 |
| C371 | D-2 |
| C372 | D-2 |
| C376 | D-2 |
| C377 | A-2 |
| C378 | D-2 |
| CN301 | B-2 |
| CN302 | B-2 |
| CN303 | C-1 |
| D303 | B-3 |
| D304 | A-2 |
| D305 | C-4 |
| IC301 | D-3 |
| IC303 | A-2 |
| J301 | C-5 |
| R301 | D-4 |
| R302 | C-4 |
| R303 | C-4 |
| R312 | A-3 |
| R314 | D-3 |
| R318 | B-3 |
| R319 | D-3 |
| R323 | B-3 |
| R328 | C-4 |
| R330 | B-3 |
| R331 | A-3 |
| R332 | B-3 |
| R333 | A-3 |
| R334 | B-3 |
| R335 | D-4 |
| R336 | B-3 |
| R337 | D-4 |
| R338 | D-3 |
| R340 | B-3 |
| R341 | B-3 |
| R342 | A-3 |
| R343 | C-2 |
| R344 | D-2 |
| R345 | A-3 |
| R346 | A-3 |
| R347 | A-3 |
| R348 | A-3 |
| R349 | A-3 |
| R350 | C-2 |
| R351 | C-2 |
| R354 | D-1 |
| R355 | D-1 |
| R356 | B-1 |
| R357 | C-2 |
| R358 | C-2 |
| R362 | A-2 |
| R363 | A-2 |
| R364 | C-2 |
| R365 | C-1 |
| R370 | C-1 |
| R371 | B-3 |
| R373 | B-1 |



rive)
MA-269
(Audio)

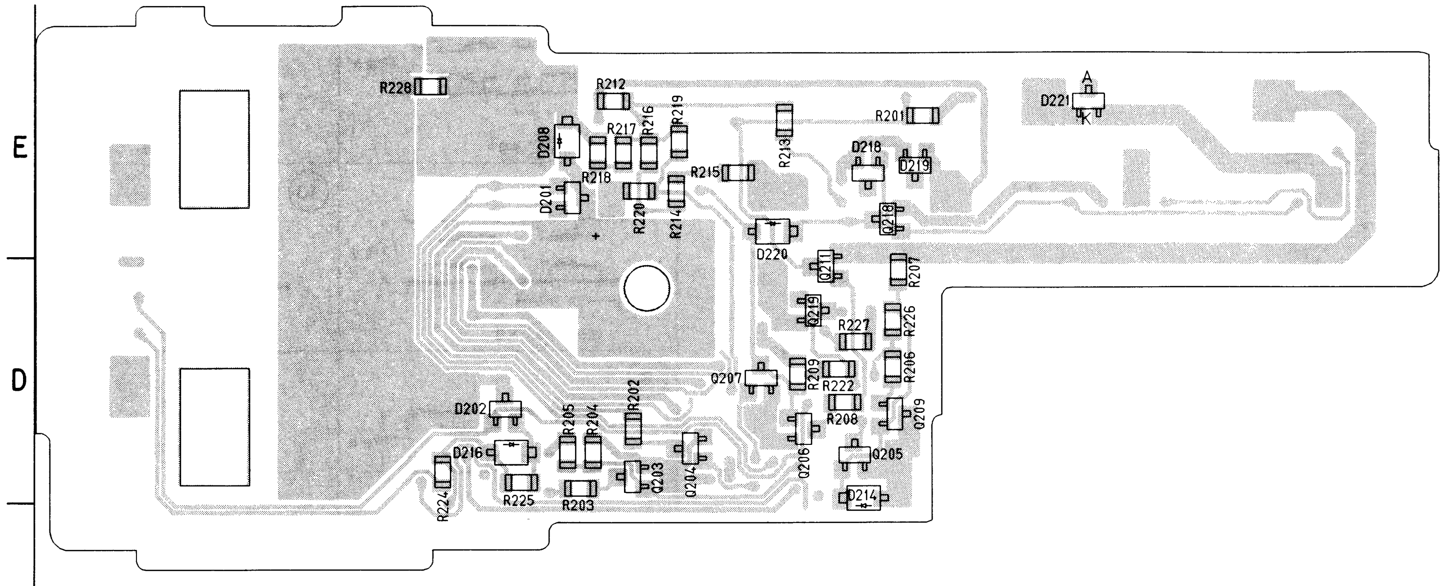


1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A
B
C
D
E
F
G
H
I
J
MA-269 BOARD
no mark : PB mode
MIC901 CN301 2P (B-2)
MIC
INT_MIC_L 1
MIC_L_GND 2
MIC (PLUG IN POWER)
J301
R301 0 1608
R302 0 1608
R303 0 1608
(C-4) D305 MA4Z082WA
LND301
LND302
C302 1000p B
C303 1000p B
MIC902 CN302 2P (B-2)
MIC
INT_MIC_R 1
MIC_R_GND 2
R356 33k
R371 18k
R318 0
C323 100p CH
R330 2200
C335 10 6.3V TA A
C336 1000p
C337 0.022 B 1608
C338 1000p B
R328 6800
C339 0.068 B 1608
C340 0.022 B 1608
C341 0.022 B 1608
C342 0.1 B 2012
C343 0.1 B 2012
R331 1k
R340 22k
C354 0.015 B 1608
R341 0
C358 3300p B 1608
R333 10k
R342 18k
R332 4700
R334 10k
C357 0.022 B 1608
C355 0.022 B 1608
C356 0.015 B 1608
C359 0.033 B 1608
C360 0.033 B 1608
R343 33k
R350 15k
C368 470p B
R351 15k
R312 15k
C315 0.01 B 1608
C314 0.1 B 2012
R314 15k
R319 4700
C326 0.1 B 2012
(D-3)
IC301
STEREO MIC AMP
IC301 BA7780KV-E2
C329 100p CH
C344 0.022 B 1608
C345 0.022 B 1608
C346 0.1 B 2012
R335 1k
C347 0.1 B 2012
R346 10k
R323 0
R338 4700
R336 2200
R337 6800
C348 10 6.3V TA A
C330 0.022 B 1608
C349 1000p
R345 10k
C361 0.022 B 1608
R348 18k
R347 0
C362 3300p B 1608
C351 0.068 B 1608
R349 22k
C367 0.015 B 1608
C363 0.033 B 1608
C364 0.033 B 1608
R344 33k
C365 0.022 B 1608
C366 0.015 B 1608
R355 15k
R354 15k
C369 470p B
C370 1 F 2012
C371 1 F 2012
C372 0.1 F
R357 5600
R358 33k
R362 12k
R363 33k
R364 560
C376 10 6.3V TA
C378 10 6.3V TA
R365 8200
(A-2) D304 MA111-TX
R373 0
(B-3) D303 CL-150HR-CD-T (REC/BATTERY)
CN303 13P (C-1)
1 XF_TALLY_LED
2 X_SIRCS_SIG
3 A_4.9V
4 REG GND
5 XWIND_ON
6 ZOOM_MIC_CONT
7 XMIC_MONO
8 EXT_MIC_DET
9 MIC_R
10 REG_GND
11 MIC_L
12 SHOE_MIC_L
13 AU_3.2V
TO VC-177 BOARD(14/14) CN107
(SEE PAGE 4-64)
R370 47
C377 10 6.3V TA A
IC303 RS-140-T
(A-2)
IC303
REMOTE COMMANDER RECEIVER
• SIGNAL PATH
AUDIO SIGNAL
REC
PB
09

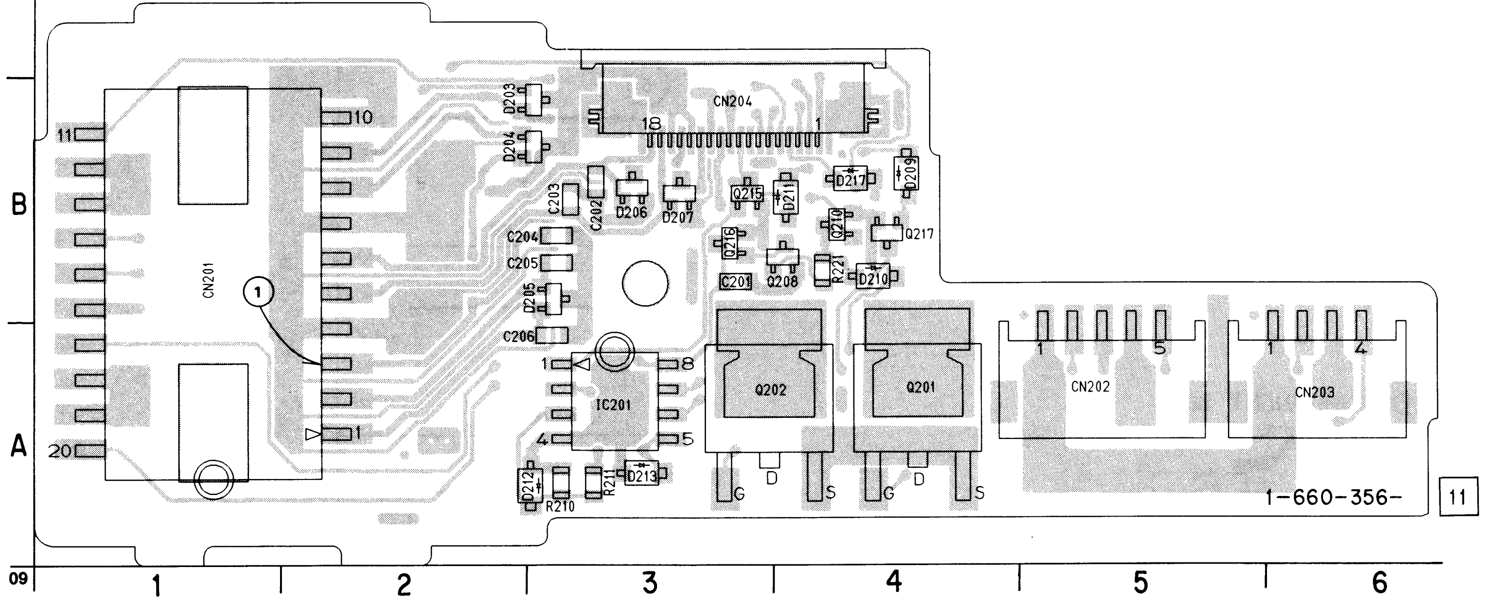
## EZ-21 (EASY CONNECTOR) PRINTED WIRING BOARD (EASY CONNECTOR MODEL)

— Ref No. EZ-21 BOARD: 6,000 series —

**EZ-21** BOARD (CONDUCTOR SIDE)

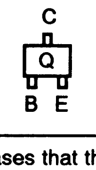

E
D
R228
R212
R217
R216
R219
R218
R215
R213
R201
D221
D218
Q218
D208
D201
R220
R214
D220
Q219
R207
R227
R226
R206
Q207
R209
R222
R202
D202
R205
R204
R208
Q209
D216
Q203
Q204
Q206
Q205
D214
R224
R225
R203

**EZ-21** BOARD (COMPONENT SIDE)

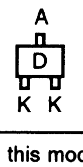

C
B
A
11
10
20
1
CN201
D203
D204
CN204
18
C203
C202
D206
D207
Q215
D211
D217
D209
C204
C205
Q216
Q208
Q210
R221
D210
Q217
C201
D205
C206
IC201
8
4
5
Q202
Q201
G D S
CN202
CN203
D212
R211
D213
R210
1-660-356-
11
09
1
2
3
4
5
6

| EZ-21 | BOARD |
|---|---|
| C201 | B-3 |
| CN201 | B-1 |
| CN202 | A-5 |
| CN203 | A-6 |
| CN204 | B-3 |
| D201 | E-3 |
| D202 | D-2 |
| D203 | B-3 |
| D204 | B-3 |
| D205 | B-3 |
| D206 | B-3 |
| D207 | B-3 |
| D209 | B-4 |
| D210 | B-4 |
| D211 | B-4 |
| D212 | A-3 |
| D213 | A-3 |
| D216 | D-2 |
| D217 | B-4 |
| D220 | E-4 |
| IC201 | A-3 |
| Q201 | A-4 |
| Q202 | A-3 |
| Q203 | D-3 |
| Q204 | D-3 |
| Q205 | D-4 |
| Q206 | D-4 |
| Q207 | D-3 |
| Q208 | B-4 |
| Q211 | D-4 |
| Q215 | B-3 |
| Q216 | B-3 |
| Q217 | B-4 |
| Q218 | E-4 |
| Q219 | D-4 |
| R201 | E-4 |
| R202 | D-3 |
| R203 | D-3 |
| R205 | D-3 |
| R207 | D-4 |
| R208 | D-4 |
| R209 | D-4 |
| R210 | A-3 |
| R211 | A-3 |
| R212 | E-3 |
| R213 | E-4 |
| R214 | E-3 |
| R215 | E-3 |
| R216 | E-3 |
| R217 | E-3 |
| R218 | E-3 |
| R219 | E-3 |
| R220 | E-3 |
| R221 | B-4 |
| R224 | D-2 |
| R226 | D-4 |
| R227 | D-4 |

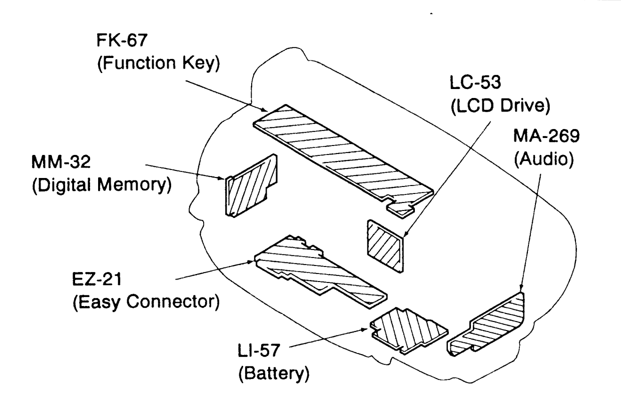
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



- Chip diode

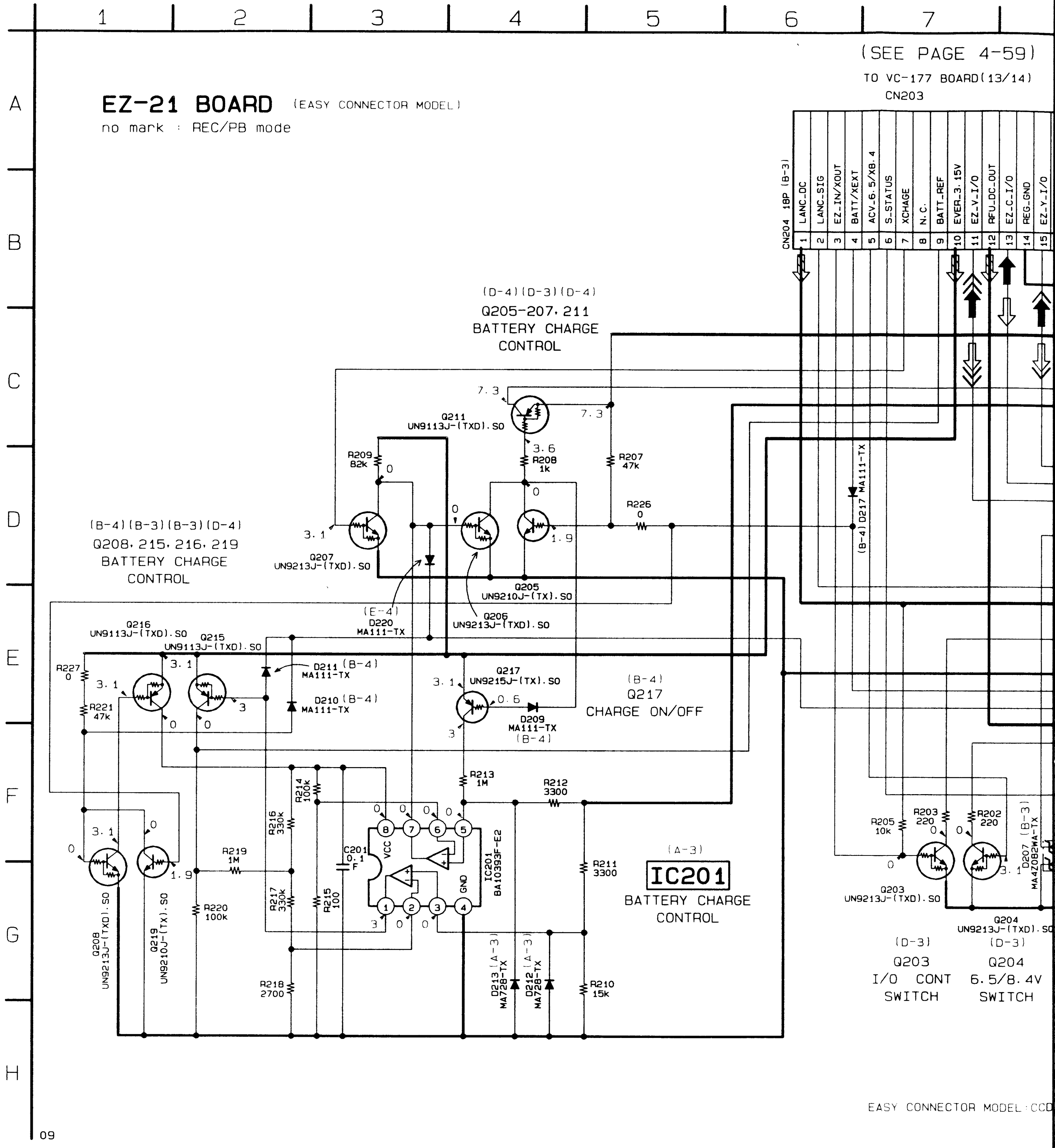


There are few cases that the part isn't mounted in this model is printed on this diagram.


FK-67
(Function Key)
LC-53
(LCD Drive)
MA-269
(Audio)
MM-32
(Digital Memory)
EZ-21
(Easy Connector)
LI-57
(Battery)

## EZ-21 (EASY CONNECTOR) SCHEMATIC DIAGRAM (EASY CONNECTOR MODEL)

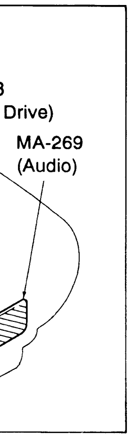
— Ref No. EZ-21 BOARD: 6,000 series —


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
(SEE PAGE 4-59)
TO VC-177 BOARD(13/14)
CN203
EZ-21 BOARD (EASY CONNECTOR MODEL)
no mark : REC/PB mode
CN204 18P (B-3)
1 LANC_DC
2 LANC_SIG
3 EZ_IN/XOUT
4 BATT/XEXT
5 ACV_6.5/X8.4
6 S_STATUS
7 XCHAGE
8 N.C.
9 BATT_REF
10 EVER_3.15V
11 EZ_V_I/O
12 RFU_DC_OUT
13 EZ_C_I/O
14 REG_GND
15 EZ_Y_I/O
(D-4)(D-3)(D-4)
Q205-207,211
BATTERY CHARGE
CONTROL
Q211
UN9113J-(TXD).SO
R209 82k
R208 1k
R207 47k
R226 0
D217 MA111-TX
(B-4)(B-3)(B-3)(D-4)
Q208,215,216,219
BATTERY CHARGE
CONTROL
Q207
UN9213J-(TXD).SO
Q205
UN9210J-(TX).SO
Q206
UN9213J-(TXD).SO
(E-4)
D220
MA111-TX
Q216
UN9113J-(TXD).SO
Q215
UN9113J-(TXD).SO
R227 0
R221 47k
D211 (B-4)
MA111-TX
D210 (B-4)
MA111-TX
Q217
UN9215J-(TX).SO
D209
MA111-TX
(B-4)
(B-4)
Q217
CHARGE ON/OFF
R213 1M
R212 3300
R214 100k
R216 330k
R219 1M
C201 0.1 F
IC201
BA10393F-E2
VCC
GND
R211 3300
(A-3)
IC201
BATTERY CHARGE
CONTROL
R220 100k
R217 330k
R215 100
R218 2700
D213 (A-3) MA728-TX
D212 (A-3) MA728-TX
R210 15k
Q208
UN9213J-(TXD).SO
Q219
UN9210J-(TX).SO
R205 10k
R203 220
R202 220
Q203
UN9213J-(TXD).SO
Q204
UN9213J-(TXD).SO
D207 (B-3) MA4Z082WA-TX
(D-3)
Q203
I/O CONT
SWITCH
(D-3)
Q204
6.5/8.4V
SWITCH
EASY CONNECTOR MODEL CCD
09

CN203
1
4
1-660-356-
11

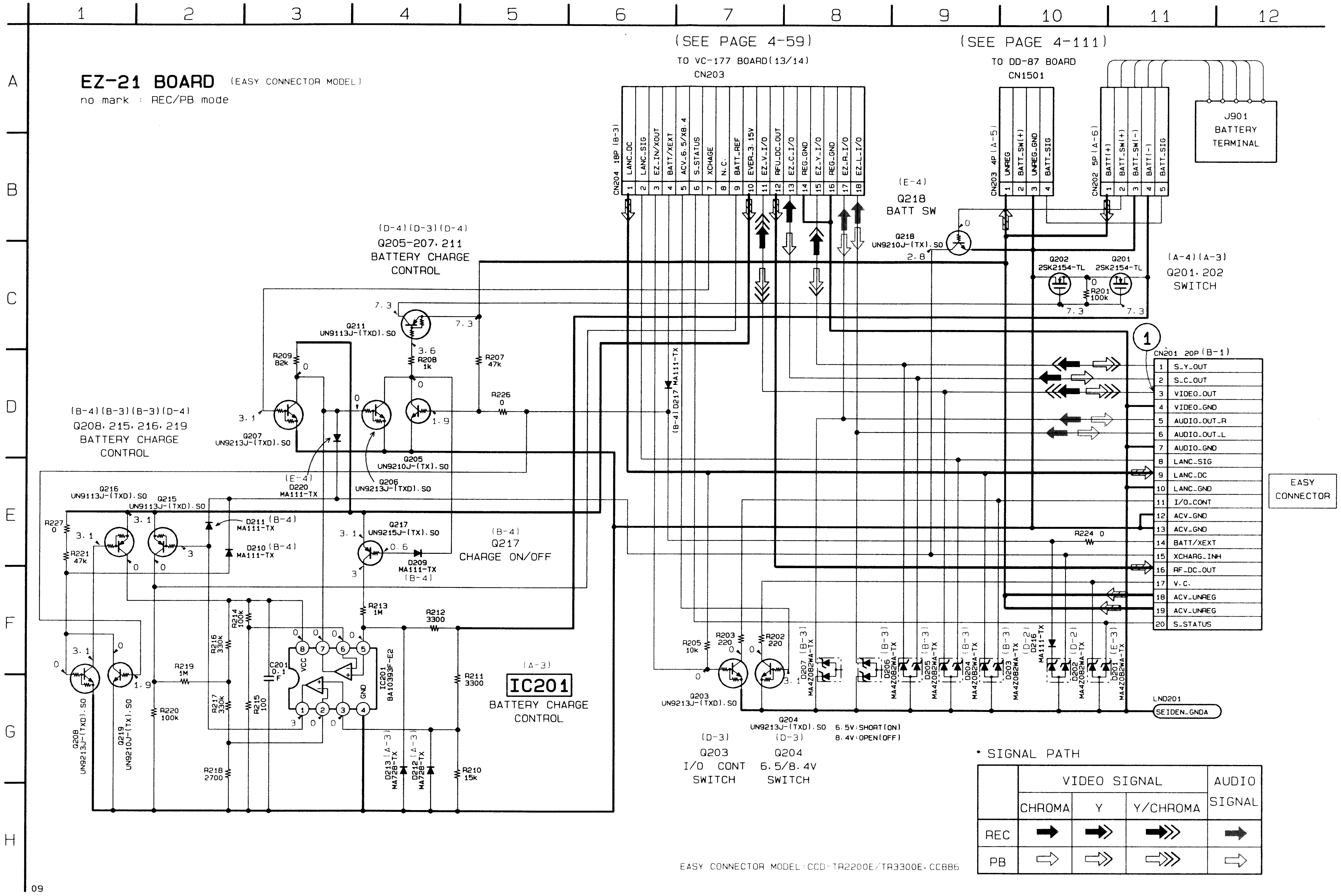
| EZ-21 | BOARD |
|---|---|
| C201 | B-3 |
| CN201 | B-1 |
| CN202 | A-5 |
| CN203 | A-6 |
| CN204 | B-3 |
| D201 | E-3 |
| D202 | D-2 |
| D203 | B-3 |
| D204 | B-3 |
| D205 | B-3 |
| D206 | B-3 |
| D207 | B-3 |
| D209 | B-4 |
| D210 | B-4 |
| D211 | B-4 |
| D212 | A-3 |
| D213 | A-3 |
| D216 | D-2 |
| D217 | B-4 |
| D220 | E-4 |
| IC201 | A-3 |
| Q201 | A-4 |
| Q202 | A-3 |
| Q203 | D-3 |
| Q204 | D-3 |
| Q205 | D-4 |
| Q206 | D-4 |
| Q207 | D-3 |
| Q208 | B-4 |
| Q211 | D-4 |
| Q215 | B-3 |
| Q216 | B-3 |
| Q217 | B-4 |
| Q218 | E-4 |
| Q219 | D-4 |
| R201 | E-4 |
| R202 | D-3 |
| R203 | D-3 |
| R205 | D-3 |
| R207 | D-4 |
| R208 | D-4 |
| R209 | D-4 |
| R210 | A-3 |
| R211 | A-3 |
| R212 | E-3 |
| R213 | E-4 |
| R214 | E-3 |
| R215 | E-3 |
| R216 | E-3 |
| R217 | E-3 |
| R218 | E-3 |
| R219 | E-3 |
| R220 | E-3 |
| R221 | B-4 |
| R224 | D-2 |
| R226 | D-4 |
| R227 | D-4 |

6


Drive)
MA-269
(Audio)

## EZ-21 (EASY CONNECTOR) SCHEMATIC DIAGRAM (EASY CONNECTOR MODEL)

— Ref No. EZ-21 BOARD: 6,000 series —

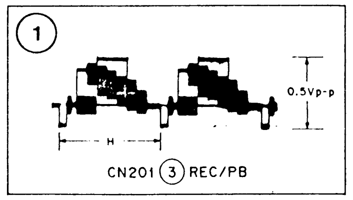

1
2
3
4
5
6
7
8
9
10
11
12
A
B
C
D
E
F
G
H
EZ-21 BOARD (EASY CONNECTOR MODEL)
no mark : REC/PB mode
(SEE PAGE 4-59)
TO VC-177 BOARD(13/14)
CN203
CN204 18P (B-3)
1 LANC_DC
2 LANC_SIG
3 EZ_IN/XOUT
4 BATT/XEXT
5 ACV_6.5/X8.4
6 S_STATUS
7 XCHAGE
8 N.C.
9 BATT_REF
10 EVER_3.15V
11 EZ_V_I/O
12 RFU_DC_OUT
13 EZ_C_I/O
14 REG_GND
15 EZ_Y_I/O
16 REG_GND
17 EZ_R_I/O
18 EZ_L_I/O
(SEE PAGE 4-111)
TO DD-87 BOARD
CN1501
CN203 4P (A-5)
1 UNREG
2 BATT_SW(+)
3 UNREG_GND
4 BATT_SIG
CN202 5P (A-6)
1 BATT(+)
2 BATT_SW(+)
3 BATT_SW(-)
4 BATT(-)
5 BATT_SIG
J901
BATTERY
TERMINAL
(E-4)
Q218
BATT SW
Q218
UN9210J-(TX).SO
2.8
Q202
2SK2154-TL
Q201
2SK2154-TL
R201
100k
7.3
(A-4)(A-3)
Q201, 202
SWITCH
(D-4)(D-3)(D-4)
Q205-207, 211
BATTERY CHARGE
CONTROL
Q211
UN9113J-(TXD).SO
R209
82k
R208
1k
3.6
R207
47k
R226
0
1.9
3.1
Q207
UN9213J-(TXD).SO
Q205
UN9210J-(TX).SO
Q206
UN9213J-(TXD).SO
(E-4)
D220
MA111-TX
(B-4)(B-3)(B-3)(D-4)
Q208, 215, 216, 219
BATTERY CHARGE
CONTROL
Q216
UN9113J-(TXD).SO
Q215
UN9113J-(TXD).SO
R227
0
R221
47k
D211 (B-4)
MA111-TX
D210 (B-4)
MA111-TX
Q217
UN9215J-(TX).SO
0.6
D209
MA111-TX
(B-4)
(B-4)
Q217
CHARGE ON/OFF
(B-4) D217 MA111-TX
R213
1M
R212
3300
R216
330k
R214
100k
C201
0.1
F
R219
1M
R217
330k
R215
100
R220
100k
R218
2700
VCC
GND
IC201
BA10393F-E2
IC201
BATTERY CHARGE
CONTROL
(A-3)
R211
3300
R210
15k
D213 (A-3)
MA728-TX
D212 (A-3)
MA728-TX
Q208
UN9213J-(TXD).SO
Q219
UN9210J-(TX).SO
R205
10k
R203
220
R202
220
Q203
UN9213J-(TXD).SO
Q204
UN9213J-(TXD).SO
6.5V:SHORT(ON)
8.4V:OPEN(OFF)
(D-3)
Q203
I/O CONT
SWITCH
(D-3)
Q204
6.5/8.4V
SWITCH
D207 (B-3) MA4Z082WA-TX
D206 (B-3) MA4Z082WA-TX
D205 (B-3) MA4Z082WA-TX
D204 (B-3) MA4Z082WA-TX
D203 (B-3) MA4Z082WA-TX
D201 (E-3) MA111-TX
D202 (D-2) MA4Z082WA-TX
D216 (D-2) MA4Z082WA-TX
LND201
SEIDEN_GNDA
R224 0
1
CN201 20P (B-1)
1 S_Y_OUT
2 S_C_OUT
3 VIDEO_OUT
4 VIDEO_GND
5 AUDIO_OUT_R
6 AUDIO_OUT_L
7 AUDIO_GND
8 LANC_SIG
9 LANC_DC
10 LANC_GND
11 I/O_CONT
12 ACV_GND
13 ACV_GND
14 BATT/XEXT
15 XCHARG_INH
16 RF_DC_OUT
17 V.C.
18 ACV_UNREG
19 ACV_UNREG
20 S_STATUS
EASY
CONNECTOR
09

• SIGNAL PATH

| | VIDEO SIGNAL | | | AUDIO SIGNAL |
|---|---|---|---|---|
| | CHROMA | Y | Y/CHROMA | |
| REC | ➡ | ➡≫ | ➡≫ | ➡ |
| PB | ⇨ | ⇨≫ | ⇨≫ | ⇨ |

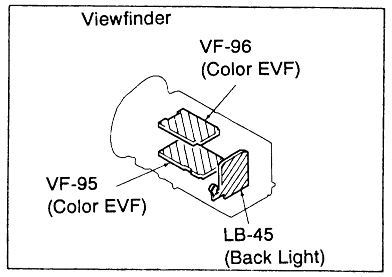
EASY CONNECTOR MODEL:CCD-TR2200E/TR3300E, CC886

**EZ-21** BOARD



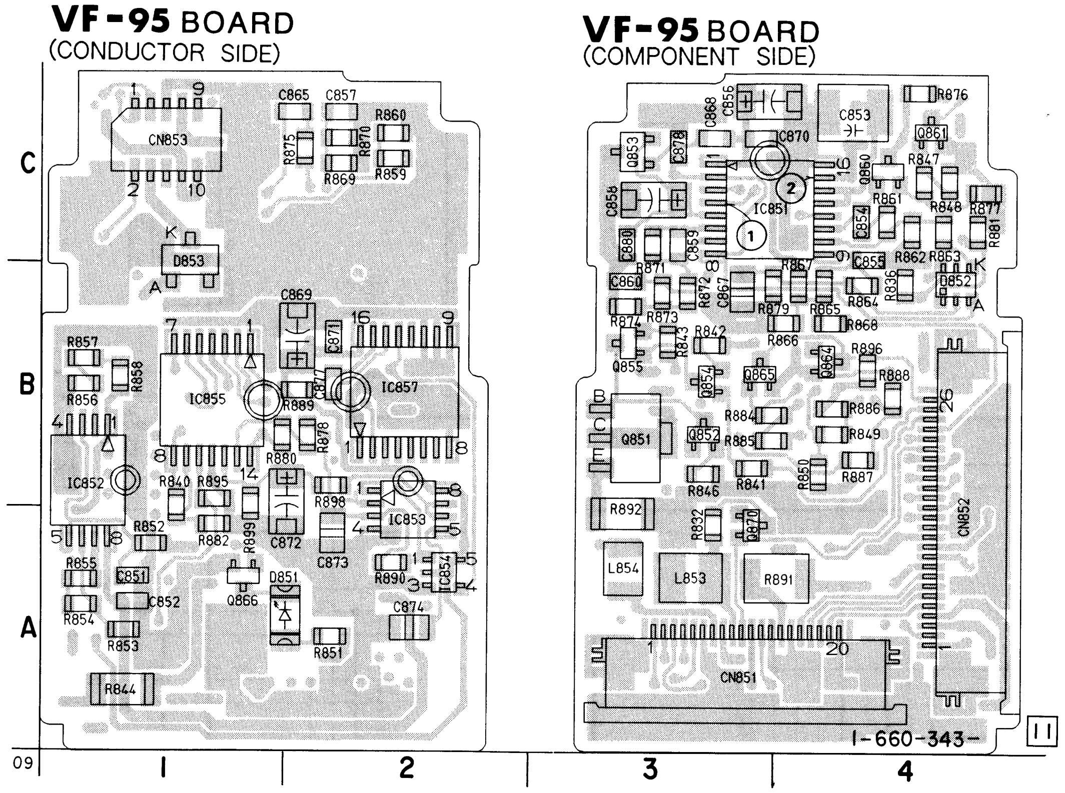
VF-95 BOARD

|  |  |
|---|---|
| C851 | A-1 |
| C852 | A-1 |
| C853 | C-4 |
| C854 | C-4 |
| C855 | C-4 |
| C856 | C-3 |
| C857 | C-2 |
| C858 | C-3 |
| C859 | C-3 |
| C860 | B-3 |
| C865 | C-2 |
| C867 | B-3 |
| C868 | C-3 |
| C869 | B-2 |
| C870 | C-3 |
| C871 | B-2 |
| C872 | B-2 |
| C873 | A-2 |
| C874 | A-2 |
| C877 | B-2 |
| C878 | C-3 |
| C880 | C-3 |
| CN851 | A-3 |
| CN852 | A-4 |
| CN853 | C-1 |
| D851 | A-2 |
| D852 | B-4 |
| D853 | C-1 |
| IC851 | C-3 |
| IC852 | B-1 |
| IC853 | B-2 |
| IC854 | A-2 |
| IC855 | B-1 |
| IC857 | B-2 |
| L853 | A-3 |
| L854 | A-3 |
| Q851 | B-3 |
| Q852 | B-3 |
| Q853 | C-3 |
| Q854 | B-3 |
| Q855 | B-3 |
| Q860 | C-4 |
| Q861 | C-4 |
| Q864 | B-4 |
| Q865 | B-3 |
| Q866 | A-1 |
| Q870 | A-3 |
| R832 | A-3 |
| R836 | B-4 |
| R840 | B-1 |
| R841 | B-3 |
| R842 | B-3 |
| R843 | B-3 |
| R844 | A-1 |
| R846 | B-3 |
| R847 | C-4 |
| R849 | B-4 |
| R850 | B-4 |
| R851 | A-2 |
| R852 | A-1 |
| R853 | A-1 |
| R854 | A-1 |
| R855 | A-1 |
| R856 | B-1 |
| R857 | B-1 |
| R858 | B-1 |
| R859 | C-2 |
| R860 | C-2 |
| R861 | C-4 |
| R862 | C-4 |
| R863 | C-4 |
| R864 | B-4 |
| R865 | B-4 |
| R867 | B-4 |
| R868 | B-4 |
| R869 | C-2 |
| R870 | C-2 |
| R871 | C-3 |
| R872 | B-3 |
| R873 | B-3 |
| R874 | B-3 |
| R875 | C-2 |
| R876 | C-4 |
| R877 | C-4 |
| R878 | B-2 |
| R879 | B-4 |
| R880 | B-2 |
| R881 | C-4 |
| R882 | A-1 |
| R884 | B-3 |
| R885 | B-3 |
| R886 | B-4 |
| R887 | B-4 |
| R888 | B-4 |
| R889 | B-2 |
| R890 | A-2 |
| R891 | A-4 |
| R892 | B-3 |
| R895 | B-1 |
| R896 | B-4 |
| R898 | B-2 |
| R899 | B-1 |

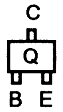

Viewfinder
VF-96
(Color EVF)
VF-95
(Color EVF)
LB-45
(Back Light)

## VF-95 (COLOR EVF) PRINTED WIRING BOARD (COLOR EVF Model)

— Ref No. VF-95 BOARD: 5,000 series —

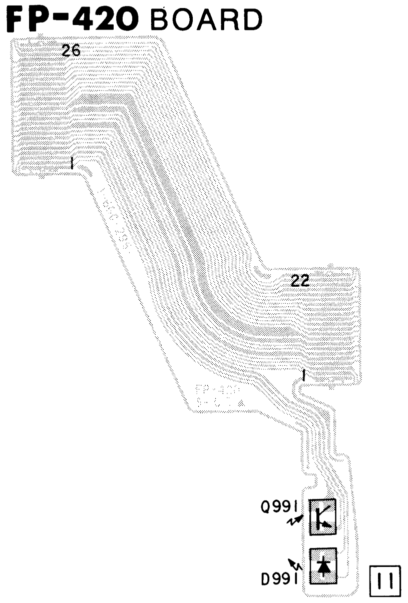

VF-95 BOARD
(CONDUCTOR SIDE)
VF-95 BOARD
(COMPONENT SIDE)
C
B
A
09
1
2
3
4
1-660-343-
11

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



There are few cases that the part isn't mounted in this model is printed on this diagram.

## FP-420 (SENSOR) FLEXIBLE BOARD

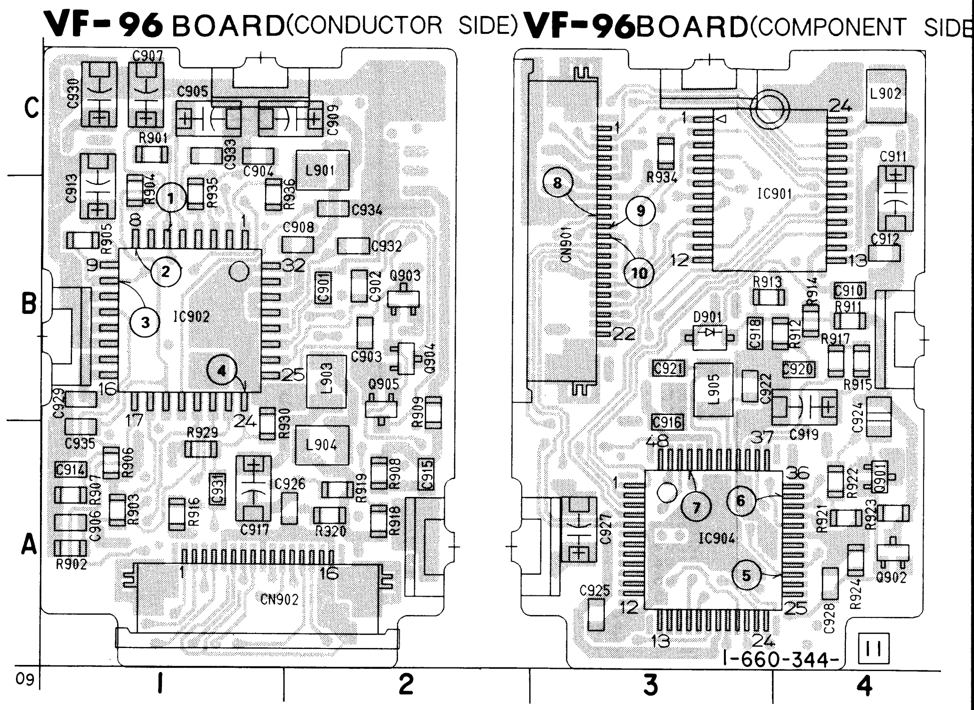

FP-420 BOARD
26
1
22
1
Q991
D991
11

VF-96 BOARD

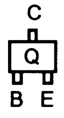
|  |  |
|---|---|
| C901 | B-2 |
| C902 | B-2 |
| C903 | B-2 |
| C904 | C-1 |
| C905 | C-1 |
| C906 | A-1 |
| C907 | C-1 |
| C908 | B-2 |
| C909 | C-2 |
| C910 | B-4 |
| C911 | B-4 |
| C912 | B-4 |
| C913 | B-1 |
| C914 | A-1 |
| C916 | B-3 |
| C917 | A-1 |
| C918 | B-3 |
| C919 | B-4 |
| C920 | B-4 |
| C921 | B-3 |
| C922 | B-3 |
| C924 | B-4 |
| C925 | A-3 |
| C927 | A-3 |
| C929 | B-1 |
| C930 | C-1 |
| C931 | A-1 |
| C932 | B-2 |
| C933 | C-1 |
| C934 | B-2 |
| C935 | A-1 |
| CN901 | B-3 |
| CN902 | A-1 |
| D901 | B-3 |
| IC901 | B-3 |
| IC902 | B-1 |
| IC904 | A-3 |
| L901 | C-2 |
| L902 | C-4 |
| L903 | B-2 |
| L904 | A-2 |
| L905 | B-3 |
| Q901 | A-4 |
| Q902 | A-4 |
| R901 | C-1 |
| R902 | A-1 |
| R903 | A-1 |
| R904 | B-1 |
| R905 | B-1 |
| R906 | A-1 |
| R907 | A-1 |
| R908 | A-2 |
| R909 | B-2 |
| R911 | B-4 |
| R912 | B-4 |
| R913 | B-3 |
| R914 | B-4 |
| R915 | B-4 |
| R917 | B-4 |
| R921 | A-4 |
| R922 | A-4 |
| R923 | A-4 |
| R924 | A-4 |
| R929 | A-1 |
| R930 | A-1 |
| R934 | C-3 |
| R935 | B-1 |
| R936 | B-1 |

## VF-96 (COLOR EVF) PRINTED WIRING BOARD (COLOR EVF Model)

— Ref No. VF-96 BOARD: 5,000 series —


VF-96 BOARD(CONDUCTOR SIDE)
VF-96 BOARD(COMPONENT SIDE
C
B
A
09
1
2
3
4
1-660-344-
11

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



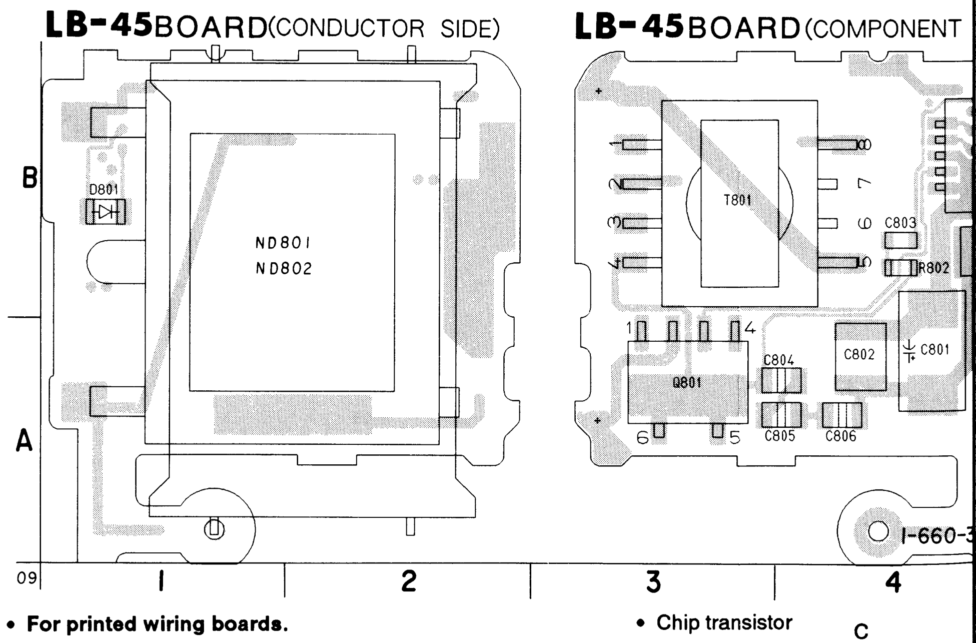
There are few cases that the part isn't mounted in this model is printed on this diagram.

LB-45 BOARD

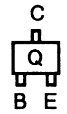
|  |  |
|---|---|
| C801 | A-4 |
| C802 | A-4 |
| C803 | B-4 |
| C804 | A-3 |
| C805 | A-3 |
| C806 | A-4 |
| CN801 | B-4 |
| D801 | B-1 |
| L801 | B-4 |
| L802 | A-4 |
| ND801 | B-1 |
| Q801 | A-3 |
| R802 | B-4 |
| T801 | B-3 |

## LB-45 (BACK LIGHT) PRINTED WIRING BOARD (COLOR EVF Model)

— Ref No. LB-45 BOARD: 5,000 series —

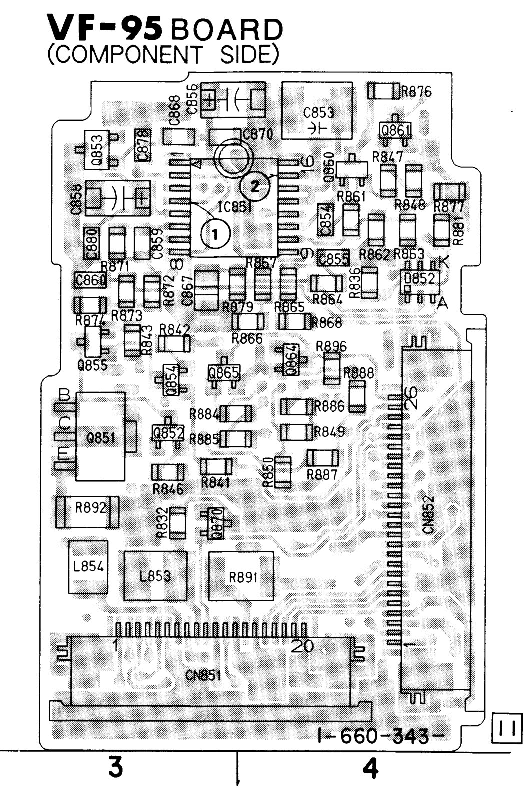

LB-45 BOARD(CONDUCTOR SIDE)
LB-45 BOARD(COMPONENT
B
A
09
1
2
3
4
D801
ND801
ND802
T801
C803
R802
C804
C802
C801
Q801
C805
C806
1-660-

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



There are few cases that the part isn't mounted in this model is printed on this diagram.

## (COLOR EVF Model)



VF-95 BOARD
(COMPONENT SIDE)
IC851
CN851
CN852
Q851
L853
L854
R891
1-660-343-
11
3
4

atterns
m.

s model is

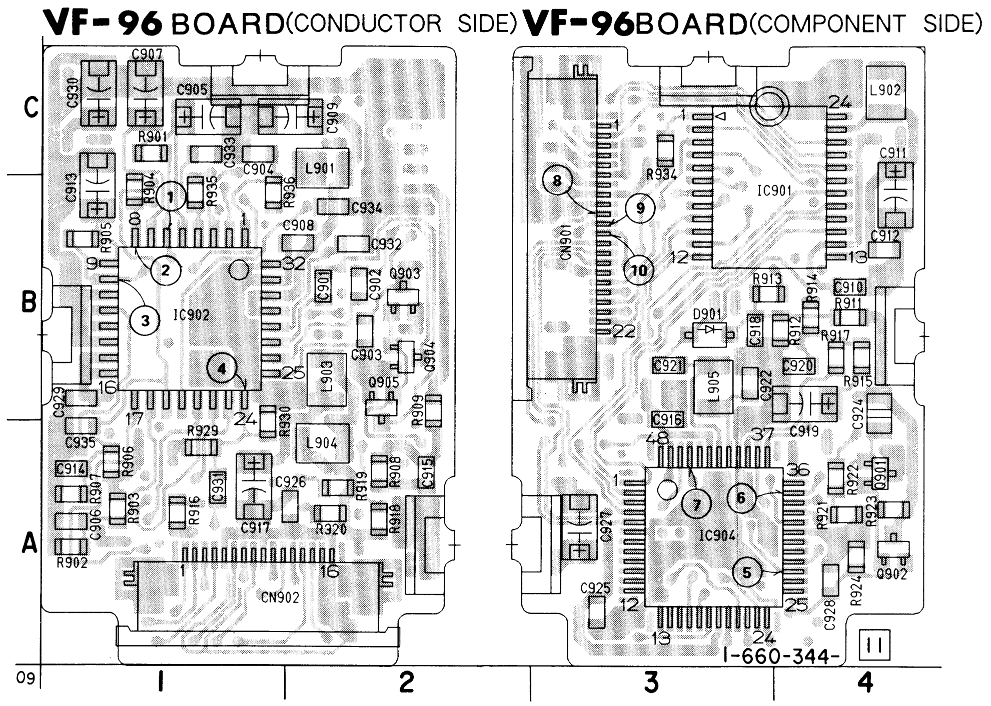
11

## VF-96 (COLOR EVF) PRINTED WIRING BOARD (COLOR EVF Model)

— Ref No. VF-96 BOARD: 5,000 series —

VF-96 BOARD

| | |
|---|---|
| C901 | B-2 |
| C902 | B-2 |
| C903 | B-2 |
| C904 | C-1 |
| C905 | C-1 |
| C906 | A-1 |
| C907 | C-1 |
| C908 | B-2 |
| C909 | C-2 |
| C910 | B-4 |
| C911 | B-4 |
| C912 | B-4 |
| C913 | B-1 |
| C914 | A-1 |
| C916 | B-3 |
| C917 | A-1 |
| C918 | B-3 |
| C919 | B-4 |
| C920 | B-4 |
| C921 | B-3 |
| C922 | B-3 |
| C924 | B-4 |
| C925 | A-3 |
| C927 | A-3 |
| C929 | B-1 |
| C930 | C-1 |
| C931 | A-1 |
| C932 | B-2 |
| C933 | C-1 |
| C934 | B-2 |
| C935 | A-1 |
| | |
| CN901 | B-3 |
| CN902 | A-1 |
| | |
| D901 | B-3 |
| IC901 | B-3 |
| IC902 | B-1 |
| IC904 | A-3 |
| | |
| L901 | C-2 |
| L902 | C-4 |
| L903 | B-2 |
| L904 | A-2 |
| L905 | B-3 |
| | |
| Q901 | A-4 |
| Q902 | A-4 |
| | |
| R901 | C-1 |
| R902 | A-1 |
| R903 | A-1 |
| R904 | B-1 |
| R905 | B-1 |
| R906 | A-1 |
| R907 | A-1 |
| R908 | A-2 |
| R909 | B-2 |
| R911 | B-4 |
| R912 | B-4 |
| R913 | B-3 |
| R914 | B-4 |
| R915 | B-4 |
| R917 | B-4 |
| R921 | A-4 |
| R922 | A-4 |
| R923 | A-4 |
| R924 | A-4 |
| R929 | A-1 |
| R930 | A-1 |
| R934 | C-3 |
| R935 | B-1 |
| R936 | B-1 |

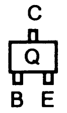


VF-96 BOARD(CONDUCTOR SIDE)
VF-96BOARD(COMPONENT SIDE)
C
B
A
IC902
IC901
IC904
CN901
CN902
L901
L904
L905
L902
D901
Q902
Q903
Q905
1-660-344-
11
09
1
2
3
4

- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

- Chip transistor

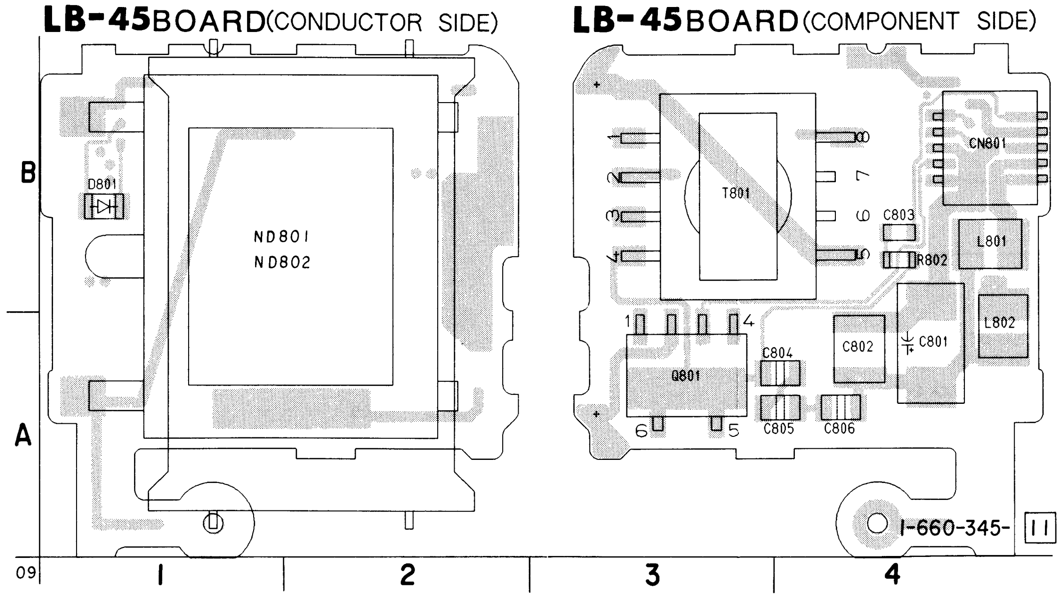


## LB-45 (BACK LIGHT) PRINTED WIRING BOARD (COLOR EVF Model)

— Ref No. LB-45 BOARD: 5,000 series —

LB-45 BOARD

| | |
|---|---|
| C801 | A-4 |
| C802 | A-4 |
| C803 | B-4 |
| C804 | A-3 |
| C805 | A-3 |
| C806 | A-4 |
| CN801 | B-4 |
| D801 | B-1 |
| L801 | B-4 |
| L802 | A-4 |
| ND801 | B-1 |
| Q801 | A-3 |
| R802 | B-4 |
| T801 | B-3 |

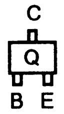


LB-45BOARD(CONDUCTOR SIDE)
LB-45BOARD(COMPONENT SIDE)
B
A
D801
ND801
ND802
T801
CN801
C803
R802
L801
L802
C802
C801
C804
Q801
C805
C806
1-660-345-
11
09
1
2
3
4

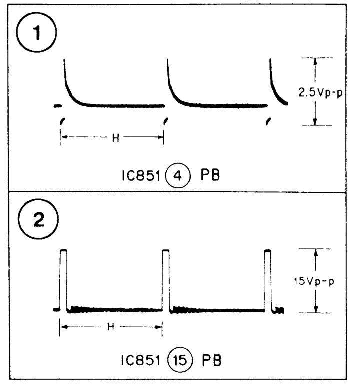
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.

There are few cases that the part isn't mounted in this model is printed on this diagram.

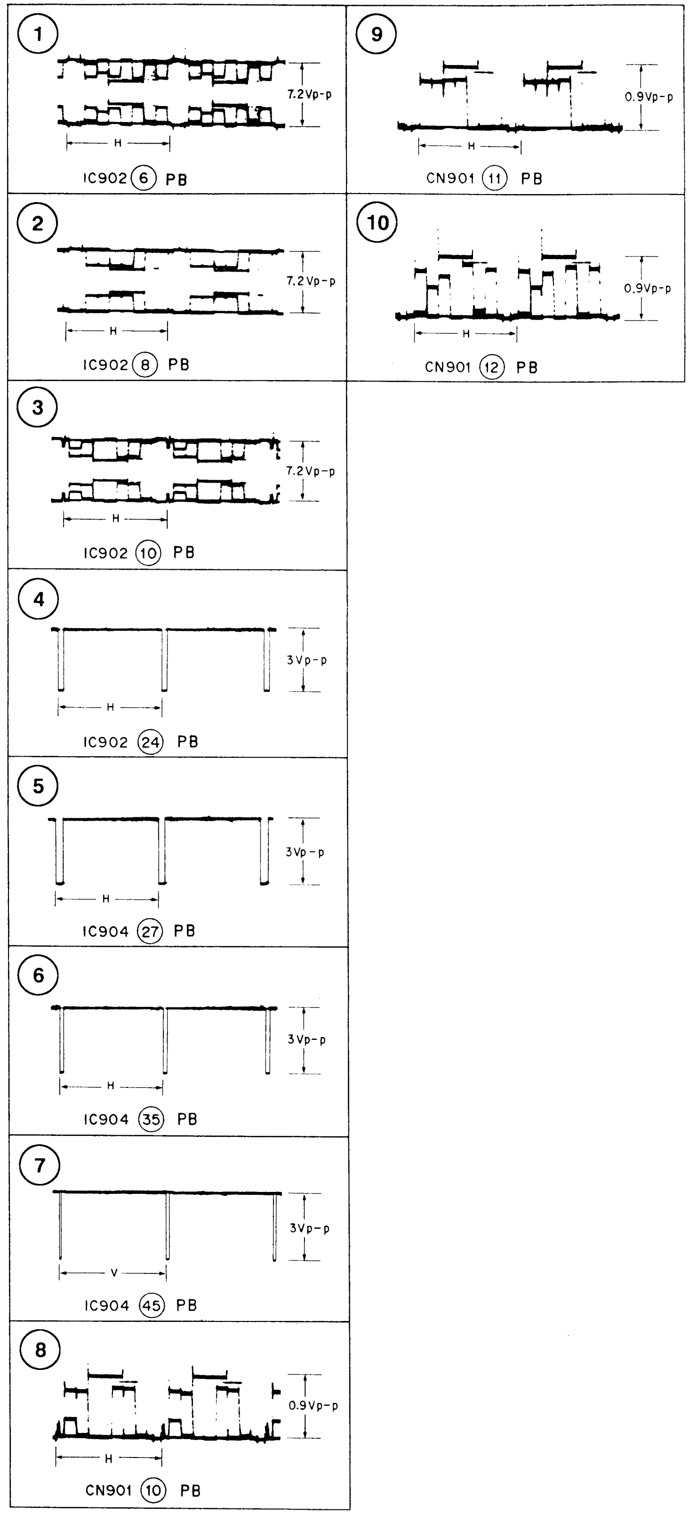
- Chip transistor



VF-95 BOARD

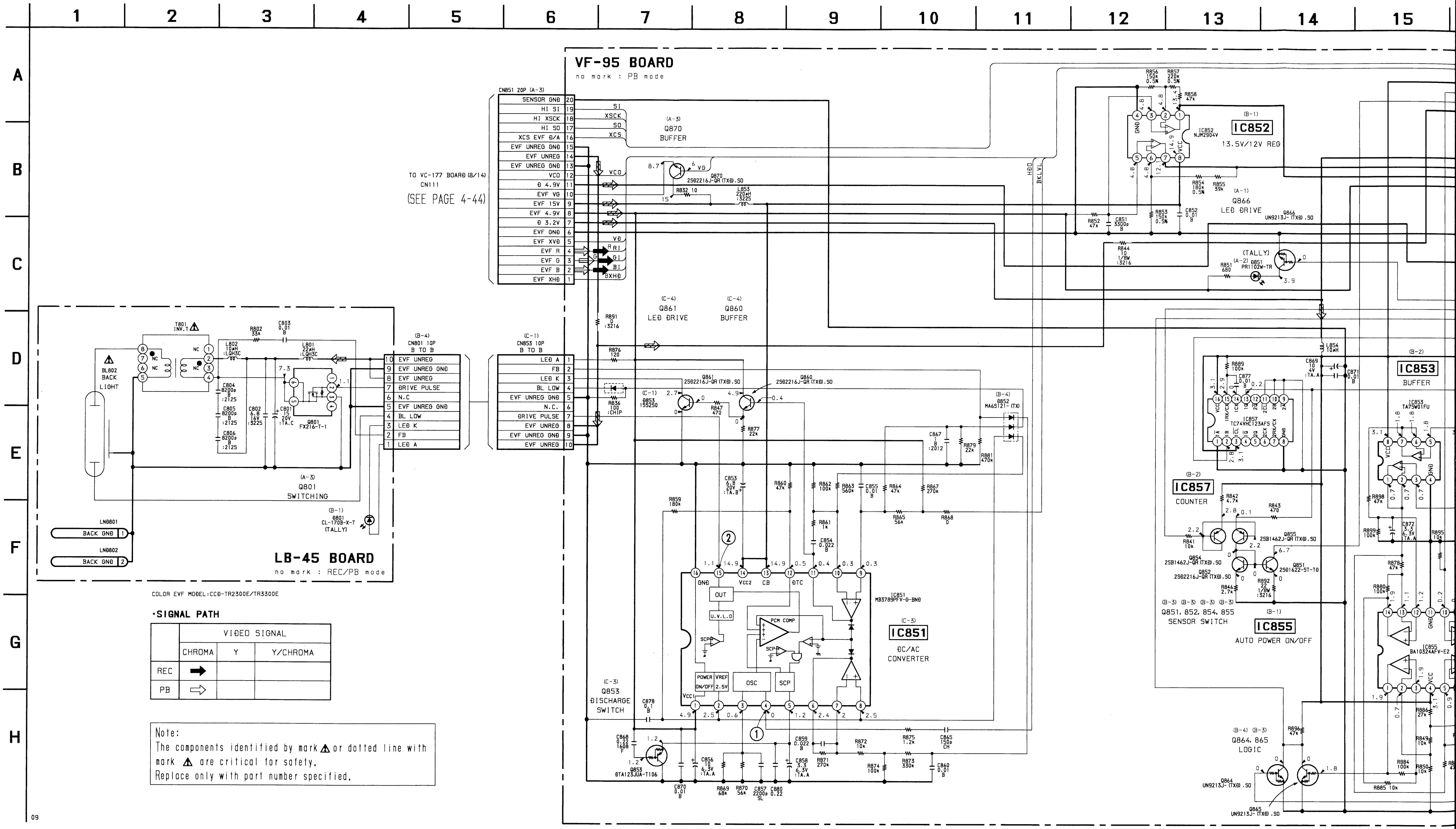


VF-96 BOARD



## VF-95, VF-96 (COLOR EVF), LB-45 (BACK LIGHT), FP-420 (SENSOR) SCHEMATIC DIAGRAMS (COLOR EVF MODEL)

— Ref No. VF-95, VF-96 and LB-45 BOARDS and FP-420 FLEXIBLE BOARD: 5,000 series —

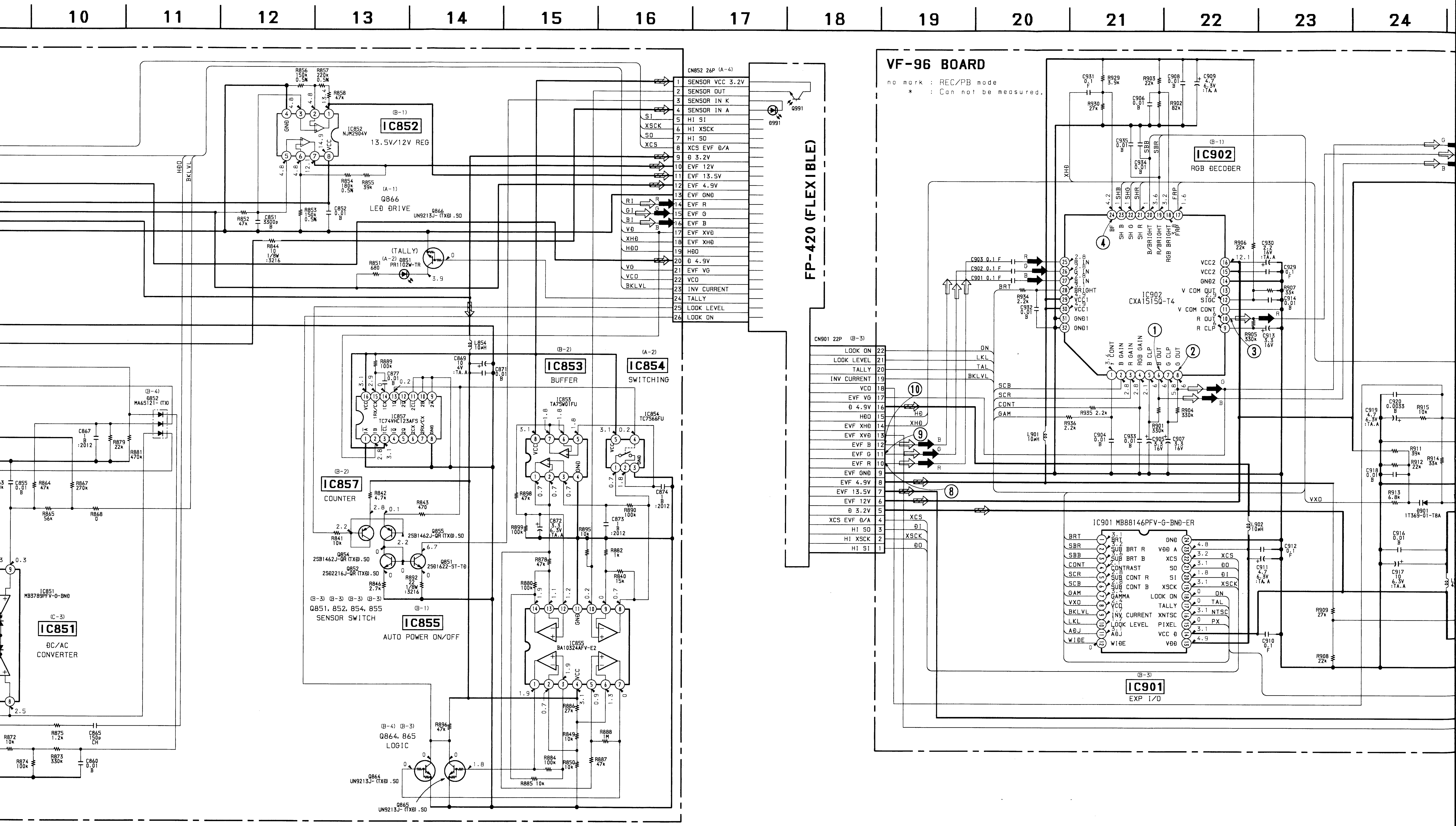


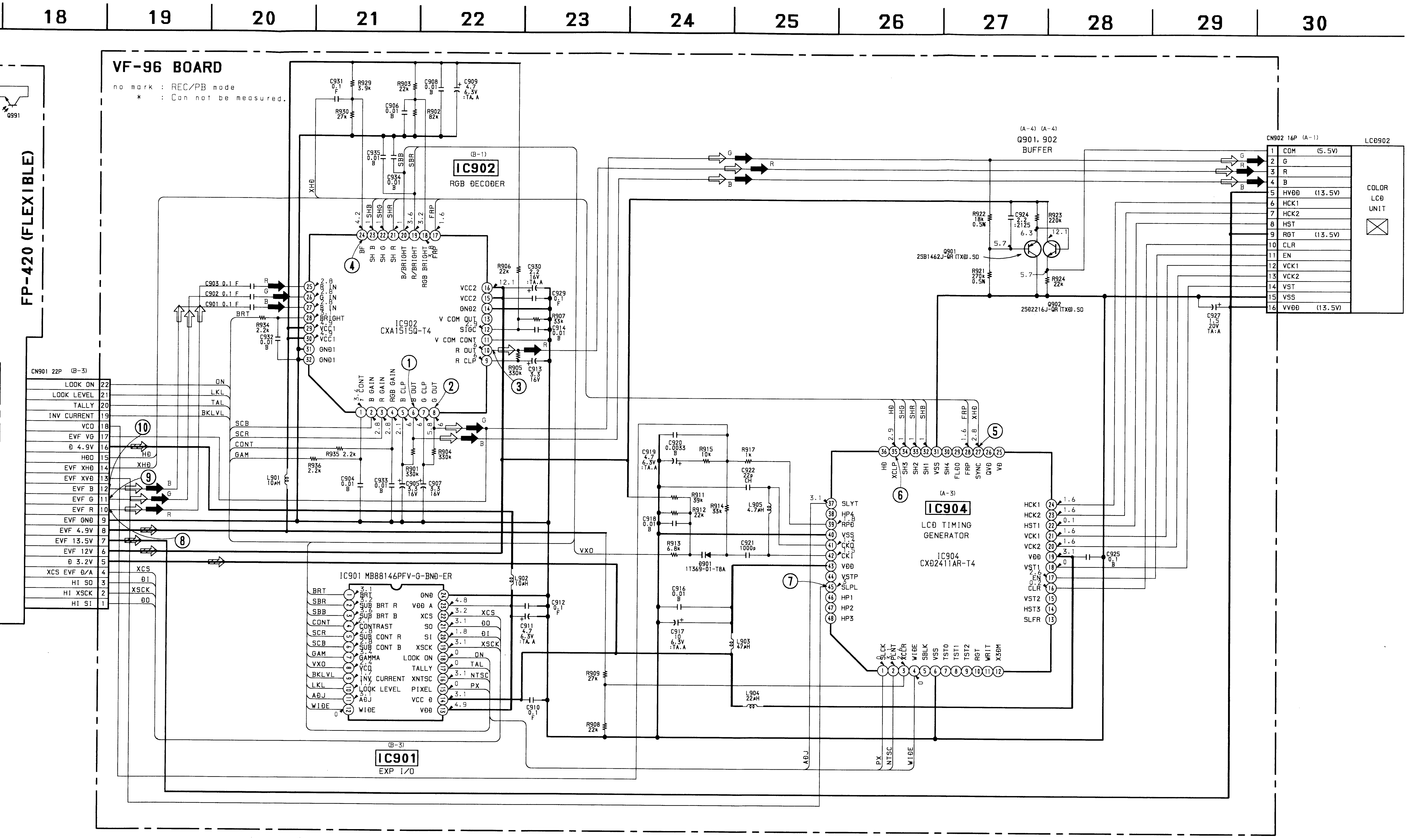
VF-95 BOARD
no mark : PB mode
CN851 20P (A-3)
SENSOR GND 20
HI SI 19
HI XSCK 18
HI SO 17
XCS EVF D/A 16
EVF UNREG GND 15
EVF UNREG 14
EVF UNREG GND 13
VCO 12
D 4.9V 11
EVF VG 10
EVF 15V 9
EVF 4.9V 8
D 3.2V 7
EVF GND 6
EVF XVD 5
EVF R 4
EVF G 3
EVF B 2
EVF XHD 1
TO VC-177 BOARD (8/14) CN111
(SEE PAGE 4-44)
(A-3) Q870 BUFFER
Q870 2SD2216J-QR(TX).SO
(B-1) IC852 13.5V/12V REG
IC852 NJM2904V
(A-1) Q866 LED DRIVE
Q866 UN9213J-(TX).SO
(TALLY) (A-2) D851 PR1102W-TR
(C-4) Q861 LED DRIVE
(C-4) Q860 BUFFER
(B-4) CN801 10P B TO B
(C-1) CN853 10P B TO B
10 EVF UNREG
9 EVF UNREG GND
8 EVF UNREG
7 DRIVE PULSE
6 N.C
5 EVF UNREG GND
4 BL LOW
3 LED K
2 FB
1 LED A
LED A 1
FB 2
LED K 3
BL LOW 4
EVF UNREG GND 5
N.C. 6
DRIVE PULSE 7
EVF UNREG 8
EVF UNREG GND 9
EVF UNREG 10
T801 INV.T
BL802 BACK LIGHT
Q801 FX216-T-1
(A-3) Q801 SWITCHING
(B-1) D801 CL-170B-X-T (TALLY)
LND801 BACK GND 1
LND802 BACK GND 2
LB-45 BOARD
no mark : REC/PB mode
Q861 2SD2216J-QR(TX).SO
Q860 2SD2216J-QR(TX).SO
(C-1) D853 1SS250
(B-4) D852 MA6S121-(TX)
IC851 MB3789PFV-G-BND
(C-3) IC851 DC/AC CONVERTER
(C-3) Q853 DISCHARGE SWITCH
Q853 DTA123JUA-T106
(B-2) IC853 BUFFER
IC853 TA75W01FU
(B-2) IC857 COUNTER
IC857 TC74VHC123AFS
Q855 2SB1462J-QR(TX).SO
Q854 2SB1462J-QR(TX).SO
Q852 2SD2216J-QR(TX).SO
Q851 2SD1622-ST-TD
(B-3) (B-3) (B-3) (B-3) Q851, 852, 854, 855 SENSOR SWITCH
(B-1) IC855 AUTO POWER ON/OFF
IC855 BA10324AFV-E2
(B-4) (B-3) Q864, 865 LOGIC
Q864 UN9213J-(TX).SO
Q865 UN9213J-(TX).SO
COLOR EVF MODEL:CCD-TR2300E/TR3300E
09

·SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | ➡ | | |
| PB | ⇨ | | |

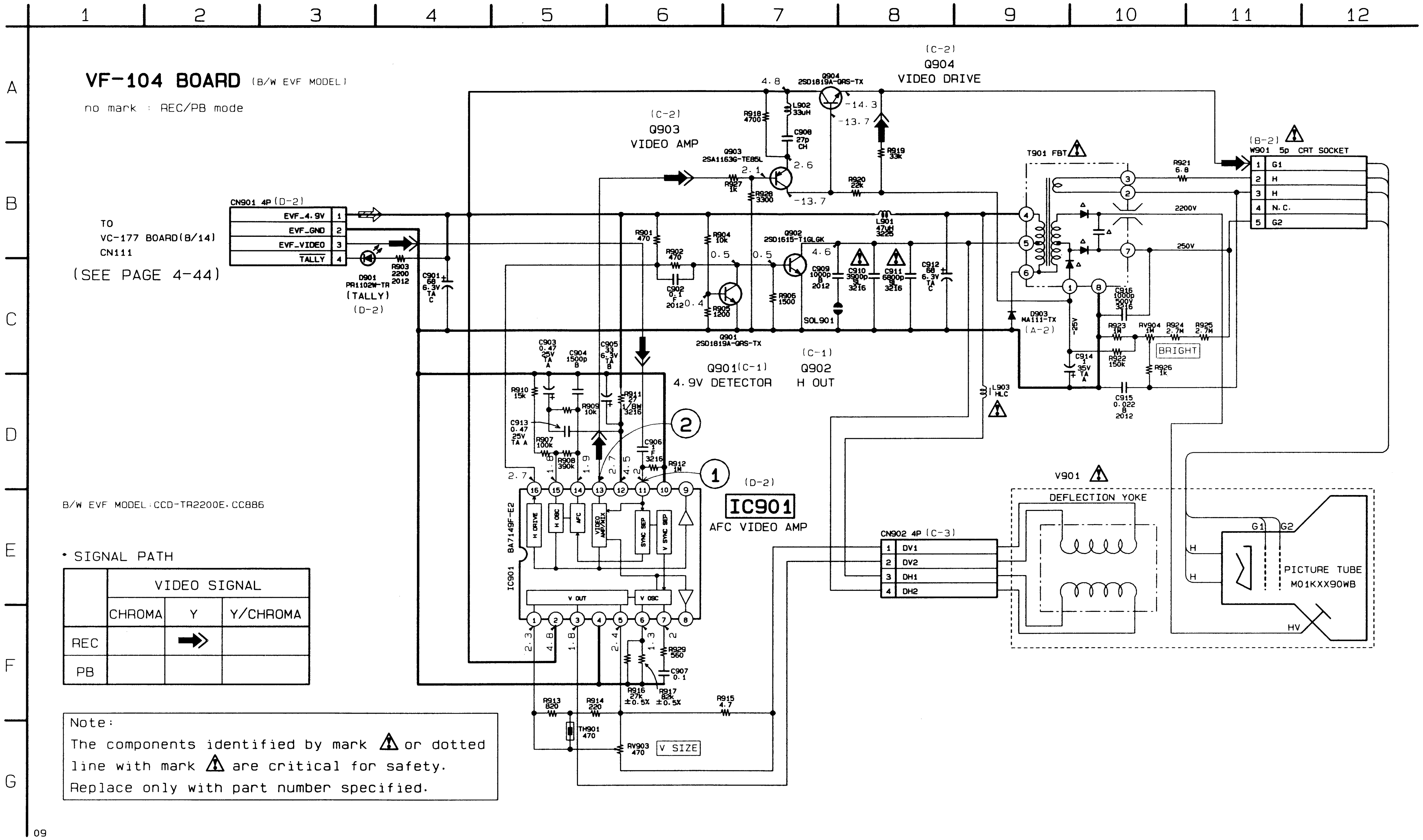
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.


10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
VF-96 BOARD
no mark : REC/PB mode
* : Can not be measured.
CN852 26P (A-4)
1 SENSOR VCC 3.2V
2 SENSOR OUT
3 SENSOR IN K
4 SENSOR IN A
5 HI SI
6 HI XSCK
7 HI SO
8 XCS EVF D/A
9 D 3.2V
10 EVF 12V
11 EVF 13.5V
12 EVF 4.9V
13 EVF GND
14 EVF R
15 EVF G
16 EVF B
17 EVF XVD
18 EVF XHD
19 HDD
20 D 4.9V
21 EVF VG
22 VCO
23 INV CURRENT
24 TALLY
25 LOOK LEVEL
26 LOOK ON
FP-420 (FLEXIBLE)
CN901 22P (B-3)
LOOK ON 22
LOOK LEVEL 21
TALLY 20
INV CURRENT 19
VCO 18
EVF VG 17
D 4.9V 16
HDD 15
EVF XHD 14
EVF XVD 13
EVF B 12
EVF G 11
EVF R 10
EVF GND 9
EVF 4.9V 8
EVF 13.5V 7
EVF 12V 6
D 3.2V 5
XCS EVF D/A 4
HI SO 3
HI XSCK 2
HI SI 1
IC852
13.5V/12V REG
IC852 NJM2904V
Q866
LED DRIVE
Q866 UN9213J-(TX0).SO
(TALLY) D851 PR1102W-TR
Q991
D991
IC851
DC/AC CONVERTER
IC851 MB3789PFV-G-BND
D852 MA6S121-(TX)
IC857
COUNTER
IC857 TC74VHC123AFS
Q851, 852, 854, 855
SENSOR SWITCH
Q854 2SB1462J-QR(TX0).SO
Q852 2SD2216J-QR(TX0).SO
Q855 2SB1462J-QR(TX0).SO
Q851 2SD1622-ST-T0
IC855
AUTO POWER ON/OFF
IC855 BA10324AFV-E2
IC853
BUFFER
IC853 TA75W01FU
IC854
SWITCHING
IC854 TC7S66FU
Q864, 865
LOGIC
Q864 UN9213J-(TX0).SO
Q865 UN9213J-(TX0).SO
IC902
RGB DECODER
IC902 CXA1515Q-T4
IC901
EXP I/O
IC901 MB88146PFV-G-BND-ER
D901 1T369-01-T8A
L901 10µH
L902 10µH
L854 10µH


18
19
20
21
22
23
24
25
26
27
28
29
30
VF-96 BOARD
no mark : REC/PB mode
* : Can not be measured.
FP-420 (FLEXIBLE)
Q991
IC902
RGB DECODER
IC902
CXA1515Q-T4
IC901 MB88146PFV-G-BND-ER
IC901
EXP I/O
IC904
LCD TIMING
GENERATOR
IC904
CXD2411AR-T4
Q901, 902
BUFFER
Q901
2SB1462J-QR(TX).SO
Q902
2SD2216J-QR(TX).SO
D901
1T369-01-T8A
CN901 22P
LOOK ON 22
LOOK LEVEL 21
TALLY 20
INV CURRENT 19
VCO 18
EVF VG 17
D 4.9V 16
HD 15
EVF XHD 14
EVF XVD 13
EVF B 12
EVF G 11
EVF R 10
EVF GND 9
EVF 4.9V 8
EVF 13.5V 7
EVF 12V 6
D 3.2V 5
XCS EVF D/A 4
HI SO 3
HI XSCK 2
HI SI 1
CN902 16P
1 COM (5.5V)
2 G
3 R
4 B
5 HVDD (13.5V)
6 HCK1
7 HCK2
8 HST
9 RGT (13.5V)
10 CLR
11 EN
12 VCK1
13 VCK2
14 VST
15 VSS
16 VVDD (13.5V)
LCD902
COLOR LCD UNIT

## VF-104 (B/W EVF) SCHEMATIC DIAGRAM (B/W EVF MODEL)

— Ref No. VF-104 BOARD: 7,000 series —

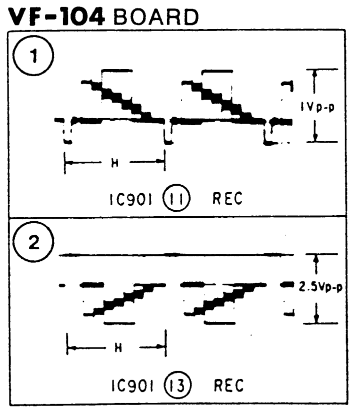


VF-104 BOARD (B/W EVF MODEL)
no mark : REC/PB mode
TO VC-177 BOARD(8/14) CN111
(SEE PAGE 4-44)
CN901 4P (D-2)
EVF_4.9V
EVF_GND
EVF_VIDEO
TALLY
D901 PR1102W-TR (TALLY) (D-2)
Q903 VIDEO AMP (C-2)
Q904 VIDEO DRIVE (C-2)
Q901 4.9V DETECTOR (C-1)
Q902 H OUT (C-1)
IC901 AFC VIDEO AMP (D-2)
T901 FBT
W901 5p CRT SOCKET (B-2)
G1
H
H
N.C.
G2
2200V
250V
BRIGHT
V SIZE
V901
DEFLECTION YOKE
CN902 4P (C-3)
DV1
DV2
DH1
DH2
PICTURE TUBE M01KXX90WB
HV
L903 HLC
SOL901
B/W EVF MODEL:CCD-TR2200E,CC886

• SIGNAL PATH

| | VIDEO SIGNAL | | |
|---|---|---|---|
| | CHROMA | Y | Y/CHROMA |
| REC | | ➡ | |
| PB | | | |

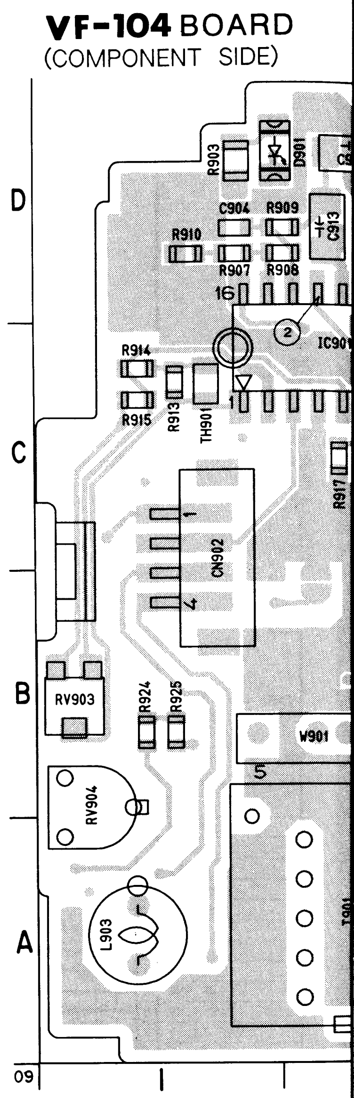
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.



## VF-104 (B/W EVF) PRINTED WIRING BOARD (B

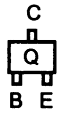
— Ref No. VF-104 BOARD: 7,000 series —

| VF-104 BOARD | |
|---|---|
| C901 | D-3 |
| C902 | C-4 |
| C903 | D-2 |
| C904 | D-1 |
| C905 | D-3 |
| C906 | D-2 |
| C907 | C-2 |
| C908 | C-3 |
| C909 | B-4 |
| C910 | B-4 |
| C911 | B-4 |
| C912 | A-3 |
| C913 | D-2 |
| C914 | A-3 |
| C915 | A-4 |
| C916 | B-4 |
| CN901 | D-4 |
| CN902 | C-1 |
| D901 | D-1 |
| D903 | A-4 |
| IC901 | C-2 |
| L901 | C-3 |
| L902 | C-3 |
| L903 | A-1 |
| Q901 | C-4 |
| Q902 | C-4 |
| Q903 | C-3 |
| Q904 | B-3 |
| R901 | C-3 |
| R902 | C-4 |
| R903 | D-1 |
| R904 | C-3 |
| R905 | C-4 |
| R906 | C-4 |
| R907 | D-1 |
| R908 | D-2 |
| R909 | D-2 |
| R910 | D-1 |
| R911 | D-4 |
| R912 | D-2 |
| R913 | C-1 |
| R914 | C-1 |
| R915 | C-1 |
| R916 | C-2 |
| R917 | C-2 |
| R918 | C-3 |
| R919 | B-3 |
| R920 | B-3 |
| R921 | B-3 |
| R922 | B-4 |
| R923 | B-4 |
| R924 | B-1 |
| R925 | B-1 |
| R926 | A-4 |
| R927 | C-3 |
| R928 | C-3 |
| R929 | C-2 |
| RV903 | B-1 |
| RV904 | B-1 |
| T901 | A-2 |
| TH901 | C-1 |
| W901 | B-2 |

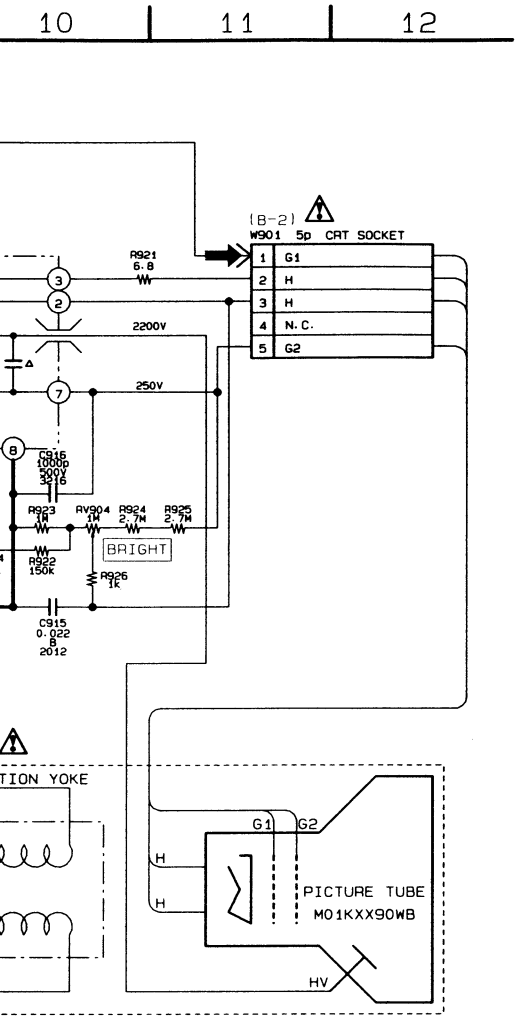


VF-104 BOARD
(COMPONENT SIDE)
D
C
B
A
R903
D901
C904
R909
C913
R910
R907
R908
R914
R915
R913
TH901
IC901
CN902
R917
RV903
R924
R925
W901
RV904
L903
09

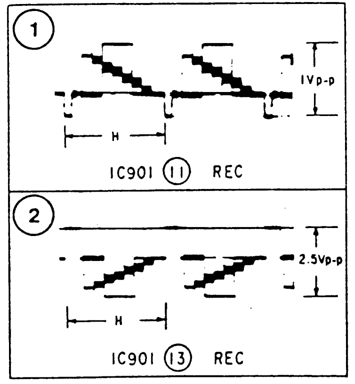
- **For printed wiring boards.**
- This board is a four-layer print boa
  of layers 2 and 3 have not been in
- Chip transistor



There are few cases that the part is
printed on this diagram.


10
11
12
(B-2)
W901 5p CRT SOCKET
1 G1
2 H
3 H
4 N.C.
5 G2
R921
6.8
2200V
250V
C916
1000p
500V
3216
R923
1M
RV904
1M
R924
2.7M
R925
2.7M
R922
150k
BRIGHT
R926
1k
C915
0.022
B
2012
TION YOKE
G1
G2
H
H
PICTURE TUBE
M01KXX90WB
HV

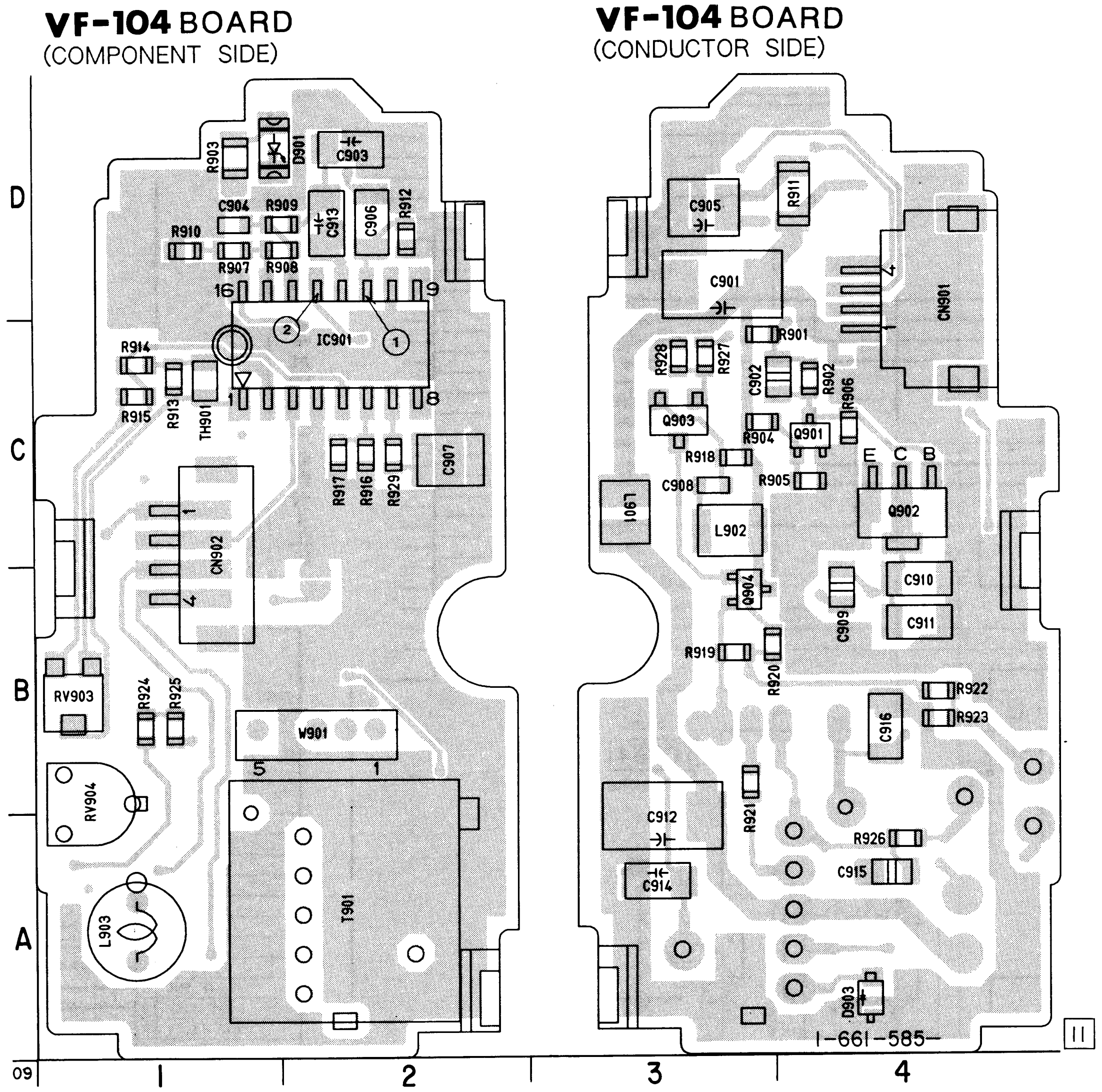
**VF-104** BOARD



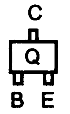
## VF-104 (B/W EVF) PRINTED WIRING BOARD (B/W EVF MODEL)

— Ref No. VF-104 BOARD: 7,000 series —

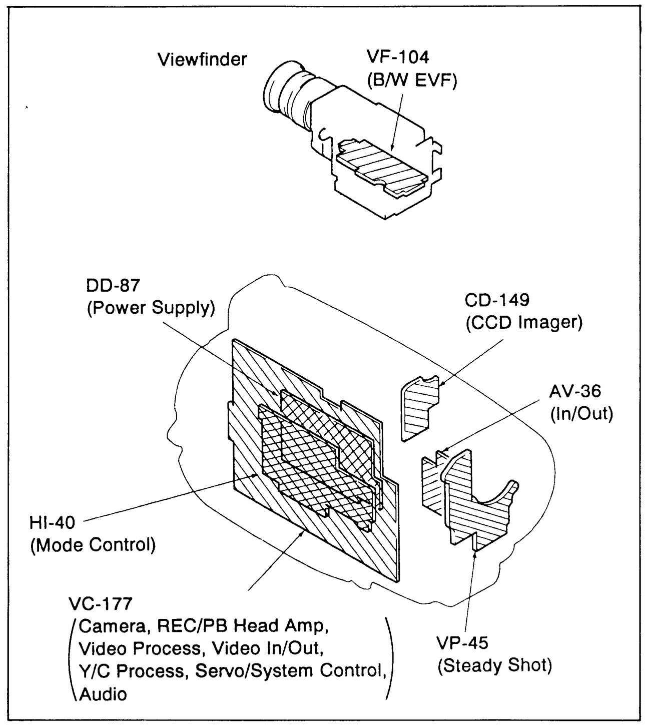
| VF-104 | BOARD |
|---|---|
| C901 | D-3 |
| C902 | C-4 |
| C903 | D-2 |
| C904 | D-1 |
| C905 | D-3 |
| C906 | D-2 |
| C907 | C-2 |
| C908 | C-3 |
| C909 | B-4 |
| C910 | B-4 |
| C911 | B-4 |
| C912 | A-3 |
| C913 | D-2 |
| C914 | A-3 |
| C915 | A-4 |
| C916 | B-4 |
| CN901 | D-4 |
| CN902 | C-1 |
| D901 | D-1 |
| D903 | A-4 |
| IC901 | C-2 |
| L901 | C-3 |
| L902 | C-3 |
| L903 | A-1 |
| Q901 | C-4 |
| Q902 | C-4 |
| Q903 | C-3 |
| Q904 | B-3 |
| R901 | C-3 |
| R902 | C-4 |
| R903 | D-1 |
| R904 | C-3 |
| R905 | C-4 |
| R906 | C-4 |
| R907 | D-1 |
| R908 | D-2 |
| R909 | D-2 |
| R910 | D-1 |
| R911 | D-4 |
| R912 | D-2 |
| R913 | C-1 |
| R914 | C-1 |
| R915 | C-1 |
| R916 | C-2 |
| R917 | C-2 |
| R918 | C-3 |
| R919 | B-3 |
| R920 | B-3 |
| R921 | B-3 |
| R922 | B-4 |
| R923 | B-4 |
| R924 | B-1 |
| R925 | B-1 |
| R926 | A-4 |
| R927 | C-3 |
| R928 | C-3 |
| R929 | C-2 |
| RV903 | B-1 |
| RV904 | B-1 |
| T901 | A-2 |
| TH901 | C-1 |
| W901 | B-2 |


VF-104 BOARD
(COMPONENT SIDE)
VF-104 BOARD
(CONDUCTOR SIDE)
D
C
B
A
09
1
2
3
4
11
1-661-585-
R903
D901
C903
C904
R909
C913
C906
R912
R910
R907
R908
16
9
1
8
IC901
R914
R915
R913
TH901
R917
R916
R929
C907
CN902
RV903
R924
R925
W901
5
1
RV904
L903
T901
C905
R911
C901
CN901
R901
R928
R927
C902
R902
R906
Q903
R918
R904
Q901
E
C
B
C908
R905
L901
L902
Q902
Q904
C909
C910
C911
R919
R920
R922
R923
C916
C912
R921
R926
C915
C914
D903

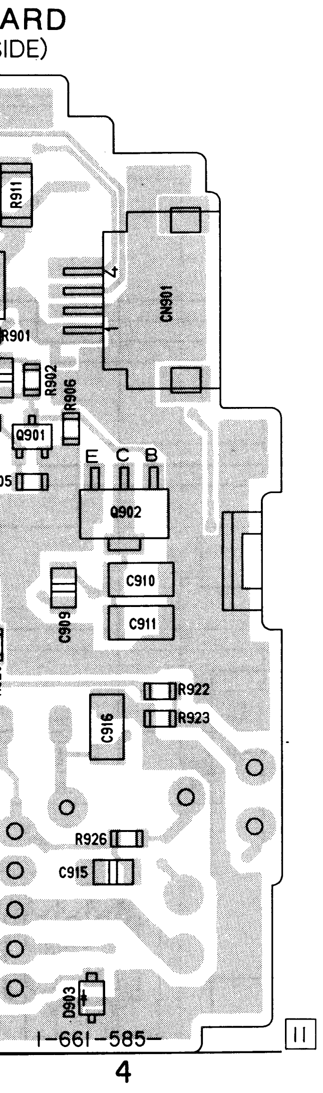
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor

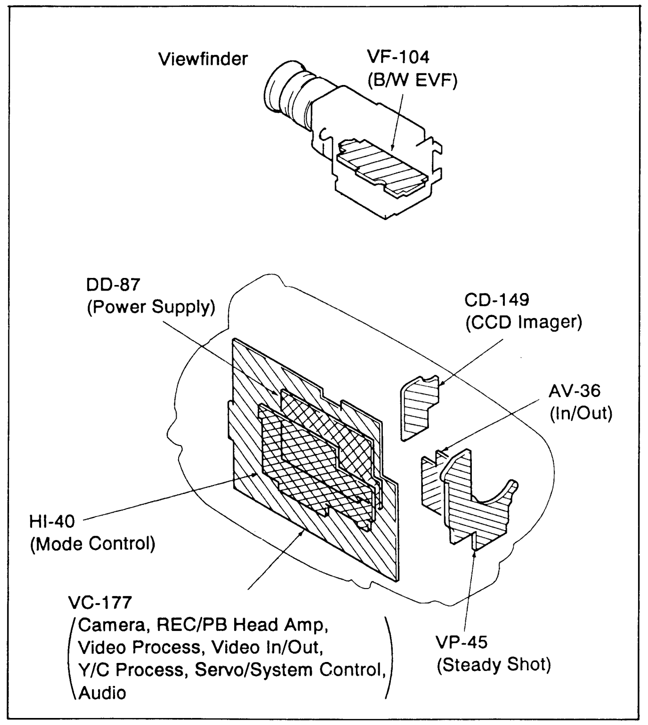


There are few cases that the part isn't mounted in this model is printed on this diagram.


Viewfinder
VF-104
(B/W EVF)
DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
(Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio)
VP-45
(Steady Shot)

| DD-87 | BOAR |
|---|---|
| C1501 | E-2 |
| C1502 | E-2 |
| C1503 | D-4 |
| C1504 | E-1 |
| C1506 | D-3 |
| C1507 | D-2 |
| C1508 | D-2 |
| C1509 | D-2 |
| C1510 | D-2 |
| C1511 | D-1 |
| C1512 | D-1 |
| C1513 | D-3 |
| C1514 | D-3 |
| C1515 | C-3 |
| C1519 | C-2 |
| C1520 | C-2 |
| C1521 | C-2 |
| C1522 | D-1 |
| C1523 | D-1 |
| C1524 | D-1 |
| C1525 | D-1 |
| C1526 | C-2 |
| C1529 | C-3 |
| C1530 | B-5 |
| C1531 | B-3 |
| C1532 | C-6 |
| C1533 | C-1 |
| C1534 | B-5 |
| C1535 | A-2 |
| C1536 | A-2 |
| C1537 | A-3 |
| C1538 | D-5 |
| C1539 | D-5 |
| C1540 | C-1 |
| C1541 | B-2 |
| C1542 | C-2 |
| C1543 | C-5 |
| C1544 | A-1 |
| C1545 | A-1 |
| C1546 | A-2 |
| C1547 | A-2 |
| C1548 | A-1 |
| C1549 | B-3 |
| C1550 | D-1 |
| C1551 | D-2 |
| CN1501 | E-4 |
| CN1503 | A-5 |
| D1501 | C-5 |
| D1502 | E-3 |
| D1503 | E-4 |
| IC1501 | D-2 |
| L1501 | D-5 |
| L1502 | D-6 |
| L1503 | D-4 |
| L1504 | B-4 |
| L1505 | C-4 |
| L1506 | B-6 |
| L1507 | B-5 |
| L1508 | A-5 |
| L1509 | A-4 |
| L1510 | A-4 |
| L1511 | C-5 |
| L1512 | C-5 |
| L1513 | A-6 |
| L1514 | A-6 |
| L1515 | A-5 |
| L1516 | A-5 |
| PS1501 | E-5 |
| PS1502 | E-5 |
| PS1503 | E-5 |
| PS1504 | E-6 |


ARD
IDE)
R911
CN901
R901
R902
R906
Q901
E C B
Q902
C910
C909
C911
R922
R923
C916
R926
C915
D903
1-661-585-
4
II


Viewfinder
VF-104
(B/W EVF)
DD-87
(Power Supply)
CD-149
(CCD Imager)
AV-36
(In/Out)
HI-40
(Mode Control)
VC-177
Camera, REC/PB Head Amp,
Video Process, Video In/Out,
Y/C Process, Servo/System Control,
Audio
VP-45
(Steady Shot)

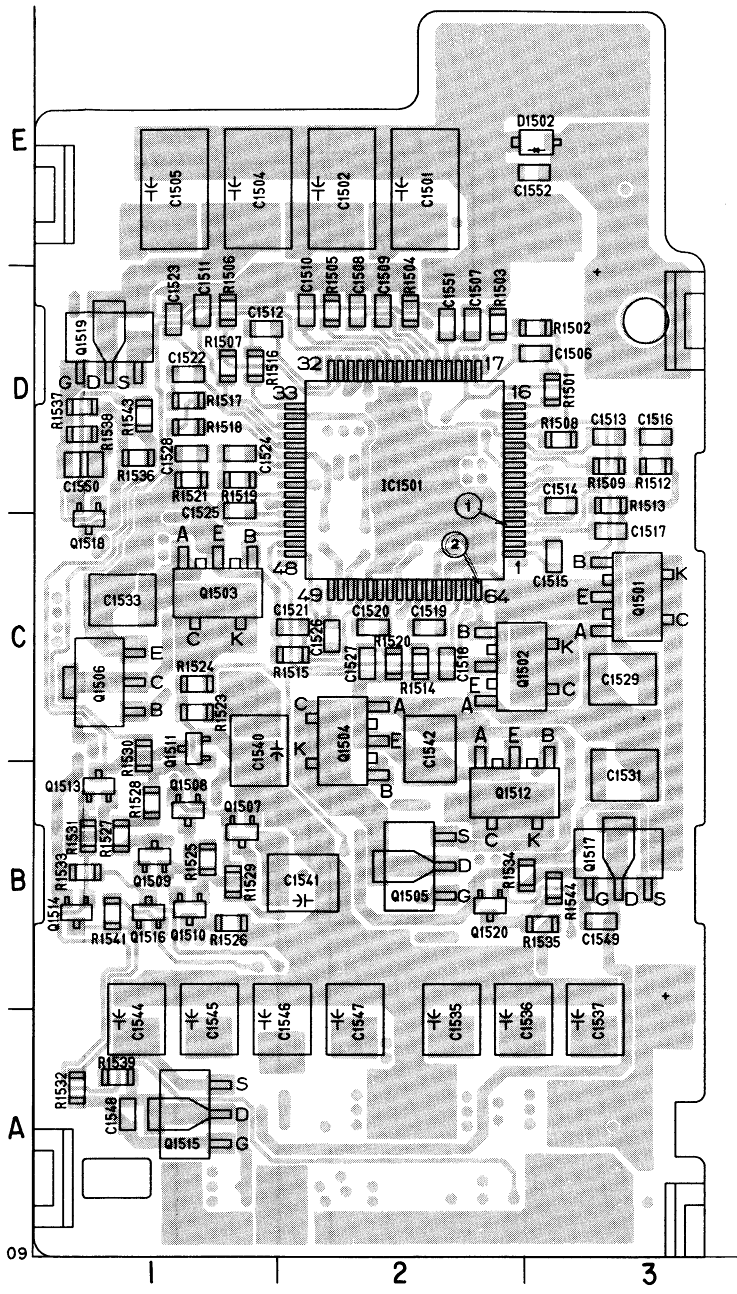
## DD-87 (POWER SUPPLY) PRINTED WIRING BOARD

— Ref No. DD-87 BOARD: 20,000 series —

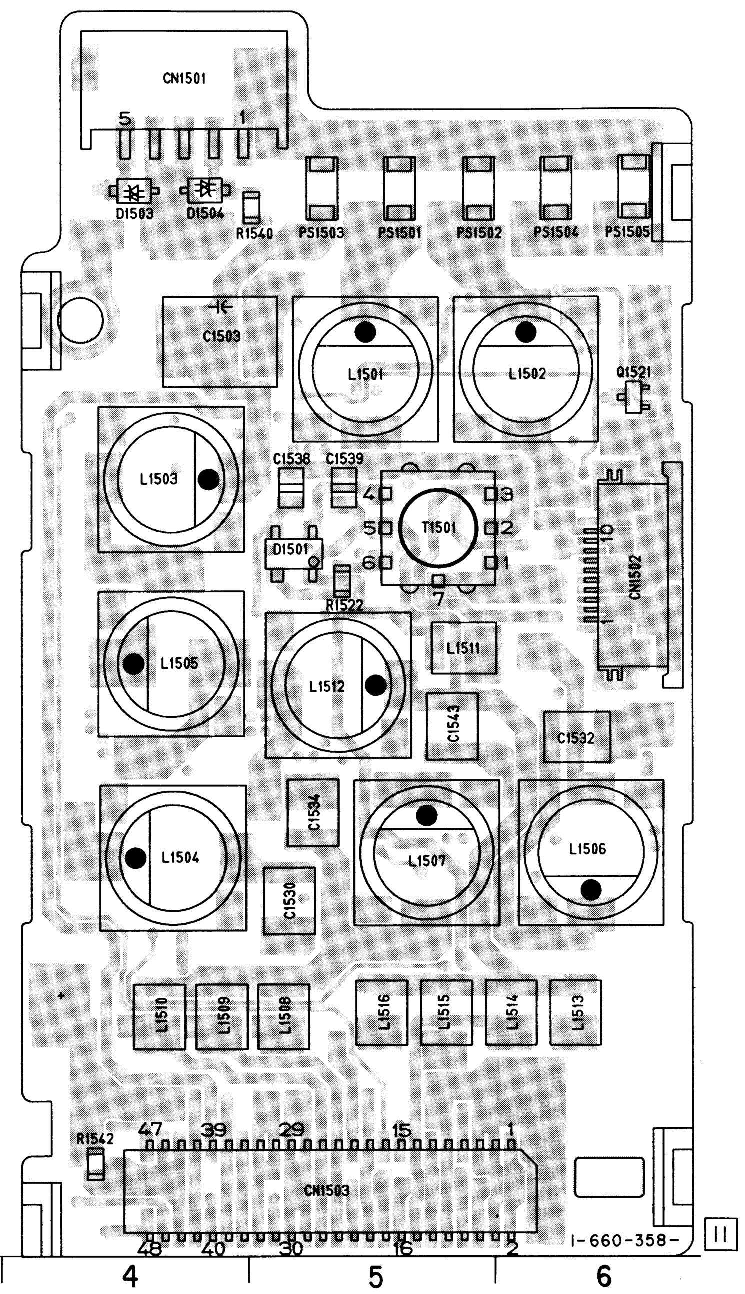
DD-87 BOARD

| | |
|---|---|
| C1501 | E-2 |
| C1502 | E-2 |
| C1503 | D-4 |
| C1504 | E-1 |
| C1506 | D-3 |
| C1507 | D-2 |
| C1508 | D-2 |
| C1509 | D-2 |
| C1510 | D-2 |
| C1511 | D-1 |
| C1512 | D-1 |
| C1513 | D-3 |
| C1514 | D-3 |
| C1515 | C-3 |
| C1519 | C-2 |
| C1520 | C-2 |
| C1521 | C-2 |
| C1522 | D-1 |
| C1523 | D-1 |
| C1524 | D-1 |
| C1525 | D-1 |
| C1526 | C-2 |
| C1529 | C-3 |
| C1530 | B-5 |
| C1531 | B-3 |
| C1532 | C-6 |
| C1533 | C-1 |
| C1534 | B-5 |
| C1535 | A-2 |
| C1536 | A-2 |
| C1537 | A-3 |
| C1538 | D-5 |
| C1539 | D-5 |
| C1540 | C-1 |
| C1541 | B-2 |
| C1542 | C-2 |
| C1543 | C-5 |
| C1544 | A-1 |
| C1545 | A-1 |
| C1546 | A-2 |
| C1547 | A-2 |
| C1548 | A-1 |
| C1549 | B-3 |
| C1550 | D-1 |
| C1551 | D-2 |
| CN1501 | E-4 |
| CN1503 | A-5 |
| D1501 | C-5 |
| D1502 | E-3 |
| D1503 | E-4 |
| IC1501 | D-2 |
| L1501 | D-5 |
| L1502 | D-6 |
| L1503 | D-4 |
| L1504 | B-4 |
| L1505 | C-4 |
| L1506 | B-6 |
| L1507 | B-5 |
| L1508 | A-5 |
| L1509 | A-4 |
| L1510 | A-4 |
| L1511 | C-5 |
| L1512 | C-5 |
| L1513 | A-6 |
| L1514 | A-6 |
| L1515 | A-5 |
| L1516 | A-5 |
| PS1501 | E-5 |
| PS1502 | E-5 |
| PS1503 | E-5 |
| PS1504 | E-6 |
| Q1501 | C-3 |
| Q1502 | C-2 |
| Q1503 | C-1 |
| Q1504 | C-2 |
| Q1505 | B-2 |
| Q1506 | C-1 |
| Q1507 | B-1 |
| Q1508 | B-1 |
| Q1509 | B-1 |
| Q1510 | B-1 |
| Q1511 | C-1 |
| Q1512 | B-2 |
| Q1513 | B-1 |
| Q1514 | B-1 |
| Q1515 | A-1 |
| Q1516 | B-1 |
| Q1517 | B-3 |
| Q1518 | C-1 |
| Q1519 | D-1 |
| Q1520 | B-2 |
| Q1521 | D-6 |
| R1501 | D-3 |
| R1503 | D-2 |
| R1504 | D-2 |
| R1505 | D-2 |
| R1506 | D-1 |
| R1507 | D-1 |
| R1508 | D-3 |
| R1509 | D-3 |
| R1512 | D-3 |
| R1513 | D-3 |
| R1514 | C-2 |
| R1515 | C-2 |
| R1516 | D-1 |
| R1517 | D-1 |
| R1518 | D-1 |
| R1519 | D-1 |
| R1520 | C-2 |
| R1521 | D-1 |
| R1522 | C-5 |
| R1523 | C-1 |
| R1524 | C-1 |
| R1525 | B-1 |
| R1526 | B-1 |
| R1527 | B-1 |
| R1528 | B-1 |
| R1529 | B-1 |
| R1530 | C-1 |
| R1531 | B-1 |
| R1532 | A-1 |
| R1533 | B-1 |
| R1534 | B-3 |
| R1535 | B-3 |
| R1536 | D-1 |
| R1537 | D-1 |
| R1538 | D-1 |
| R1543 | D-1 |
| R1544 | B-3 |
| T1501 | C-5 |

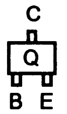
### DD-87 BOARD (CONDUCTOR SIDE)


E
D
C
B
A
09
1
2
3
C1505
C1504
C1502
C1501
D1502
C1552
Q1519
C1523
C1511
R1506
C1512
R1507
C1522
R1516
C1510
R1505
C1508
C1509
R1504
C1551
C1507
R1503
R1502
C1506
R1501
32
17
16
33
R1537
R1538
R1543
R1517
R1518
R1536
C1528
C1524
C1560
R1521
R1519
C1525
Q1518
IC1501
R1508
C1513
C1516
C1514
R1509
R1512
R1513
C1517
48
1
49
64
A E B
C1533
Q1503
C K
C1515
Q1501
C1521
C1520
C1519
C1526
C1527
R1520
C1518
R1524
R1515
R1514
Q1506
Q1502
C1529
R1523
R1530
Q1511
C1540
Q1504
C1542
Q1512
C1531
Q1513
R1528
Q1508
Q1507
R1531
R1527
R1533
R1525
R1529
Q1509
C1541
Q1505
R1534
Q1517
Q1514
R1541
Q1516
Q1510
R1526
Q1520
R1535
C1549
R1544
C1544
C1545
C1546
C1547
C1535
C1536
C1537
R1539
R1532
C1548
Q1515
S
D
G

### DD-87 BOARD (COMPONENT SIDE)


CN1501
5
1
D1503
D1504
R1540
PS1503
PS1501
PS1502
PS1504
PS1505
C1503
L1501
L1502
Q1521
L1503
C1538
C1539
4
5
6
3
2
1
7
T1501
D1501
R1522
CN1502
L1505
L1512
L1511
C1543
C1532
L1504
C1534
L1507
L1506
C1530
L1510
L1509
L1508
L1516
L1515
L1514
L1513
R1542
47
39
29
15
CN1503
48
40
30
16
2
1-660-358-
II
4
5
6

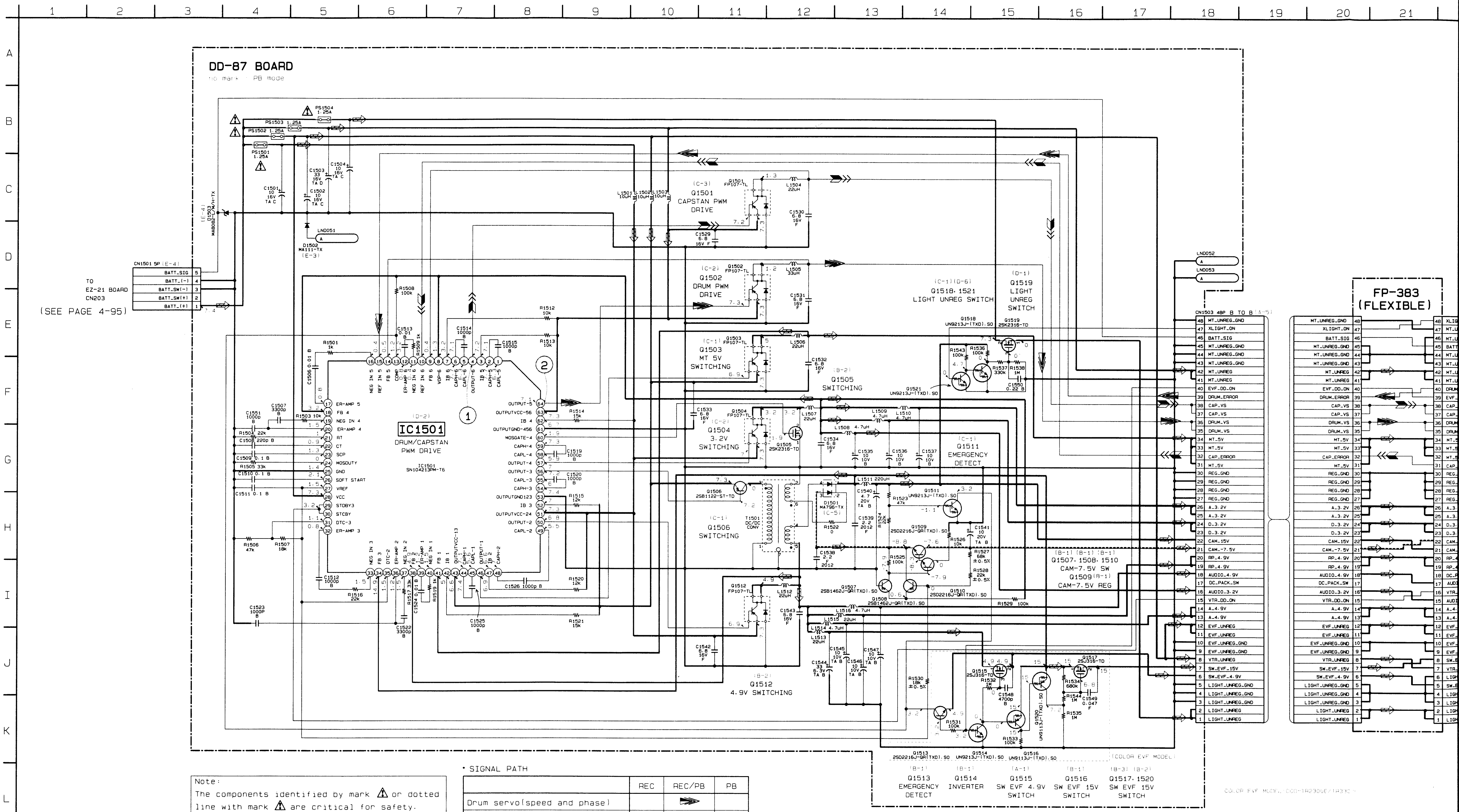
- **For printed wiring boards.**
- This board is a four-layer print board. However, the patterns of layers 2 and 3 have not been included in the diagram.
- Chip transistor



There are few cases that the part isn't mounted in this model is printed on this diagram.

## DD-87 (POWER SUPPLY), FP-383 (CONNECTOR) SCHEMATIC DIAGRAMS

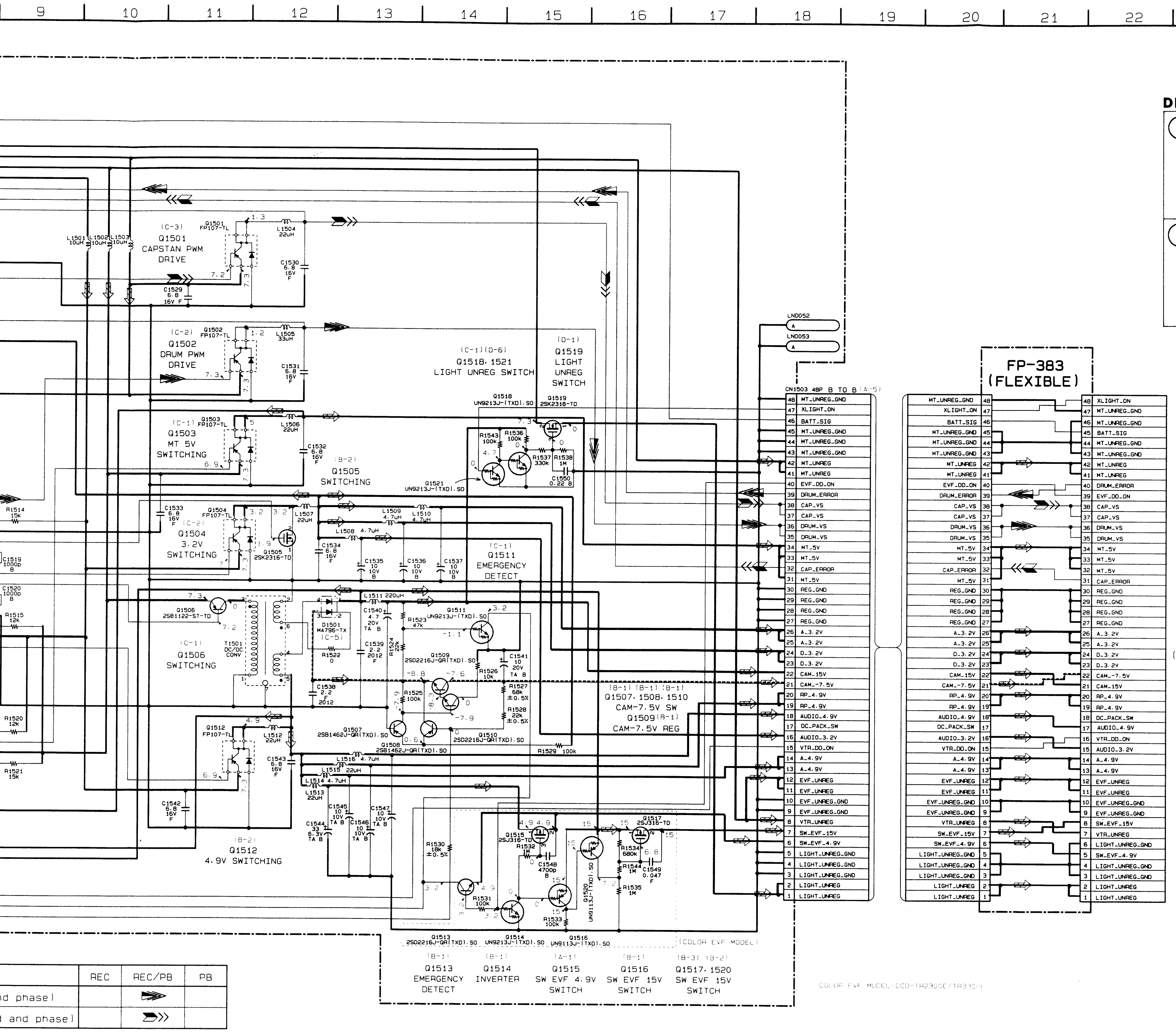
— Ref No. DD-87 BOARD: 20,000 series —


DD-87 BOARD
no mark : PB mode
TO EZ-21 BOARD CN203 (SEE PAGE 4-95)
CN1501 5P
BATT_SIG
BATT_(-)
BATT_SW(-)
BATT_SW(+)
BATT_(+)
PS1501 1.25A
PS1502 1.25A
PS1503 1.25A
PS1504 1.25A
D1503 MA8082-(K)H-TX
D1502 MA111-TX
LND051
IC1501
DRUM/CAPSTAN PWM DRIVE
IC1501 SN104213PM-T6
Q1501 CAPSTAN PWM DRIVE
Q1502 DRUM PWM DRIVE
Q1503 MT 5V SWITCHING
Q1504 3.2V SWITCHING
Q1505 SWITCHING
Q1506 SWITCHING
T1501 DC/DC CONV
Q1511 EMERGENCY DETECT
Q1512 4.9V SWITCHING
Q1518, 1521 LIGHT UNREG SWITCH
Q1519 LIGHT UNREG SWITCH
Q1507, 1508, 1510 CAM-7.5V SW
Q1509 CAM-7.5V REG
Q1513 EMERGENCY DETECT
Q1514 INVERTER
Q1515 SW EVF 4.9V SWITCH
Q1516 SW EVF 15V SWITCH
Q1517, 1520 SW EVF 15V SWITCH
(COLOR EVF MODEL)
LND052
LND053
CN1503 48P B TO B
FP-383 (FLEXIBLE)
MT_UNREG_GND
XLIGHT_ON
BATT_SIG
MT_UNREG
EVF_DD_ON
DRUM_ERROR
CAP_VS
DRUM_VS
MT_5V
CAP_ERROR
REG_GND
A_3.2V
D_3.2V
CAM_15V
CAM_-7.5V
RP_4.9V
AUDIO_4.9V
DC_PACK_SW
AUDIO_3.2V
VTR_DD_ON
A_4.9V
EVF_UNREG
EVF_UNREG_GND
VTR_UNREG
SW_EVF_15V
SW_EVF_4.9V
LIGHT_UNREG_GND
LIGHT_UNREG

• SIGNAL PATH

| | REC | REC/PB | PB |
|---|---|---|---|
| Drum servo (speed and phase) | | ➡ | |
| Capstan servo (speed and phase) | | ⇒ | |

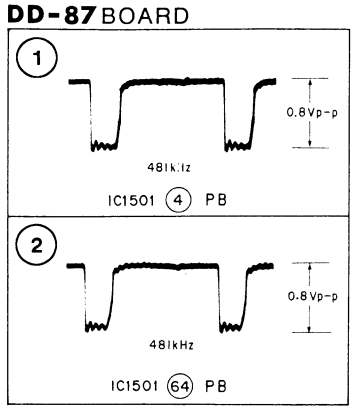
Note:
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.


9
10
11
12
13
14
15
16
17
18
19
20
21
22
(C-3) Q1501 CAPSTAN PWM DRIVE
Q1501 FP107-TL
L1501 10uH
L1502 10uH
L1503 10uH
L1504 22uH
C1529 6.8 16V F
C1530 6.8 16V F
(C-2) Q1502 DRUM PWM DRIVE
Q1502 FP107-TL
L1505 33uH
C1531 6.8 16V F
(C-1) Q1503 MT 5V SWITCHING
Q1503 FP107-TL
L1506 22uH
C1532 6.8 16V F
(B-2) Q1505 SWITCHING
Q1505 2SK2316-TD
(C-2) Q1504 3.2V SWITCHING
Q1504 FP107-TL
C1533 6.8 16V F
L1507 22uH
L1508 4.7uH
L1509 4.7uH
L1510 4.7uH
C1534 6.8 16V F
C1535 10 10V B
C1536 10 10V B
C1537 10 10V B
(C-1)(D-6) Q1518, 1521 LIGHT UNREG SWITCH
(D-1) Q1519 LIGHT UNREG SWITCH
Q1518 UN9213J-(TXD).SO
Q1519 2SK2316-TD
Q1521 UN9213J-(TXD).SO
R1543 100k
R1536 100k
R1537 330k
R1538 1M
C1550 0.22 B
(C-1) Q1511 EMERGENCY DETECT
Q1511 UN9213J-(TXD).SO
(C-1) Q1506 SWITCHING
Q1506 2SB1122-ST-TD
T1501 DC/DC CONV
D1501 MA796-TX (C-5)
R1522 0
L1511 220uH
C1540 4.7 20V TA B
C1539 2.2 2012 F
C1538 2.2 F 2012
R1523 47k
R1524 22k
R1525 100k
R1526 10k
C1541 10 20V TA B
R1527 68k ±0.5%
R1528 22k ±0.5%
Q1509 2SD2216J-QR(TXD).SO
(B-1)(B-1)(B-1) Q1507, 1508, 1510 CAM-7.5V SW
Q1509 (B-1) CAM-7.5V REG
Q1507 2SB1462J-QR(TXD).SO
Q1508 2SB1462J-QR(TXD).SO
Q1510 2SD2216J-QR(TXD).SO
R1529 100k
Q1512 FP107-TL
L1512 22uH
C1543 6.8 16V F
L1515 22uH
L1516 4.7uH
L1514 4.7uH
L1513 22uH
C1542 6.8 16V F
(B-2) Q1512 4.9V SWITCHING
C1544 33 6.3V TA B
C1545 10 10V TA B
C1546 10 10V TA B
C1547 10 10V TA B
R1530 18k ±0.5%
R1531 100k
Q1515 2SJ316-TD
R1532 1M
C1548 4700p B
R1533 100k
Q1517 2SJ316-TD
R1534 680k
R1544 1M
C1549 0.047 F
R1535 1M
Q1520 UN9113J-(TXD).SO
R1514 15k
R1515 12k
R1520 12k
R1521 15k
C1519 1000p B
C1520 1000p B
Q1513 2SD2216J-QR(TXD).SO
Q1514 UN9213J-(TXD).SO
Q1516 UN9113J-(TXD).SO
(COLOR EVF MODEL)
(B-1) Q1513 EMERGENCY DETECT
(B-1) Q1514 INVERTER
(A-1) Q1515 SW EVF 4.9V SWITCH
(B-1) Q1516 SW EVF 15V SWITCH
(B-3)(B-2) Q1517, 1520 SW EVF 15V SWITCH
LND052
LND053
CN1503 48P B TO B (A-5)
48 MT_UNREG_GND
47 XLIGHT_ON
46 BATT_SIG
45 MT_UNREG_GND
44 MT_UNREG_GND
43 MT_UNREG_GND
42 MT_UNREG
41 MT_UNREG
40 EVF_DD_ON
39 DRUM_ERROR
38 CAP_VS
37 CAP_VS
36 DRUM_VS
35 DRUM_VS
34 MT_5V
33 MT_5V
32 CAP_ERROR
31 MT_5V
30 REG_GND
29 REG_GND
28 REG_GND
27 REG_GND
26 A_3.2V
25 A_3.2V
24 D_3.2V
23 D_3.2V
22 CAM_15V
21 CAM_-7.5V
20 RP_4.9V
19 RP_4.9V
18 AUDIO_4.9V
17 DC_PACK_SW
16 AUDIO_3.2V
15 VTR_DD_ON
14 A_4.9V
13 A_4.9V
12 EVF_UNREG
11 EVF_UNREG
10 EVF_UNREG_GND
9 EVF_UNREG_GND
8 VTR_UNREG
7 SW_EVF_15V
6 SW_EVF_4.9V
5 LIGHT_UNREG_GND
4 LIGHT_UNREG_GND
3 LIGHT_UNREG_GND
2 LIGHT_UNREG
1 LIGHT_UNREG
FP-383 (FLEXIBLE)
48 XLIGHT_ON
47 MT_UNREG_GND
46 MT_UNREG_GND
45 BATT_SIG
44 MT_UNREG_GND
43 MT_UNREG_GND
42 MT_UNREG
41 MT_UNREG
40 DRUM_ERROR
39 EVF_DD_ON
38 CAP_VS
37 CAP_VS
36 DRUM_VS
35 DRUM_VS
34 MT_5V
33 MT_5V
32 MT_5V
31 CAP_ERROR
30 REG_GND
29 REG_GND
28 REG_GND
27 REG_GND
26 A_3.2V
25 A_3.2V
24 D_3.2V
23 D_3.2V
22 CAM_-7.5V
21 CAM_15V
20 RP_4.9V
19 RP_4.9V
18 DC_PACK_SW
17 AUDIO_4.9V
16 VTR_DD_ON
15 AUDIO_3.2V
14 A_4.9V
13 A_4.9V
12 EVF_UNREG
11 EVF_UNREG
10 EVF_UNREG_GND
9 EVF_UNREG_GND
8 SW_EVF_15V
7 VTR_UNREG
6 LIGHT_UNREG_GND
5 SW_EVF_4.9V
4 LIGHT_UNREG_GND
3 LIGHT_UNREG_GND
2 LIGHT_UNREG
1 LIGHT_UNREG
COLOR EVF MODEL(CCD-TR2300E/TR330)

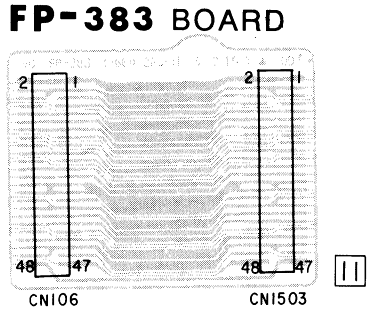
TO VC-177 BOARD(14/14) CN106 (SEE PAGE 4-65)

|  | REC | REC/PB | PB |
|---|---|---|---|
| d phase) |  | ➡ |  |
| and phase) |  | ⇒›› |  |

**DD-87** BOARD



**FP-383** BOARD


2
1
2
1
48
47
48
47
CN106
CN1503

11

## POWER SUPPLY, CONNECTOR
DD-87, FP-383

# SECTION 5
# REPAIR PARTS LIST

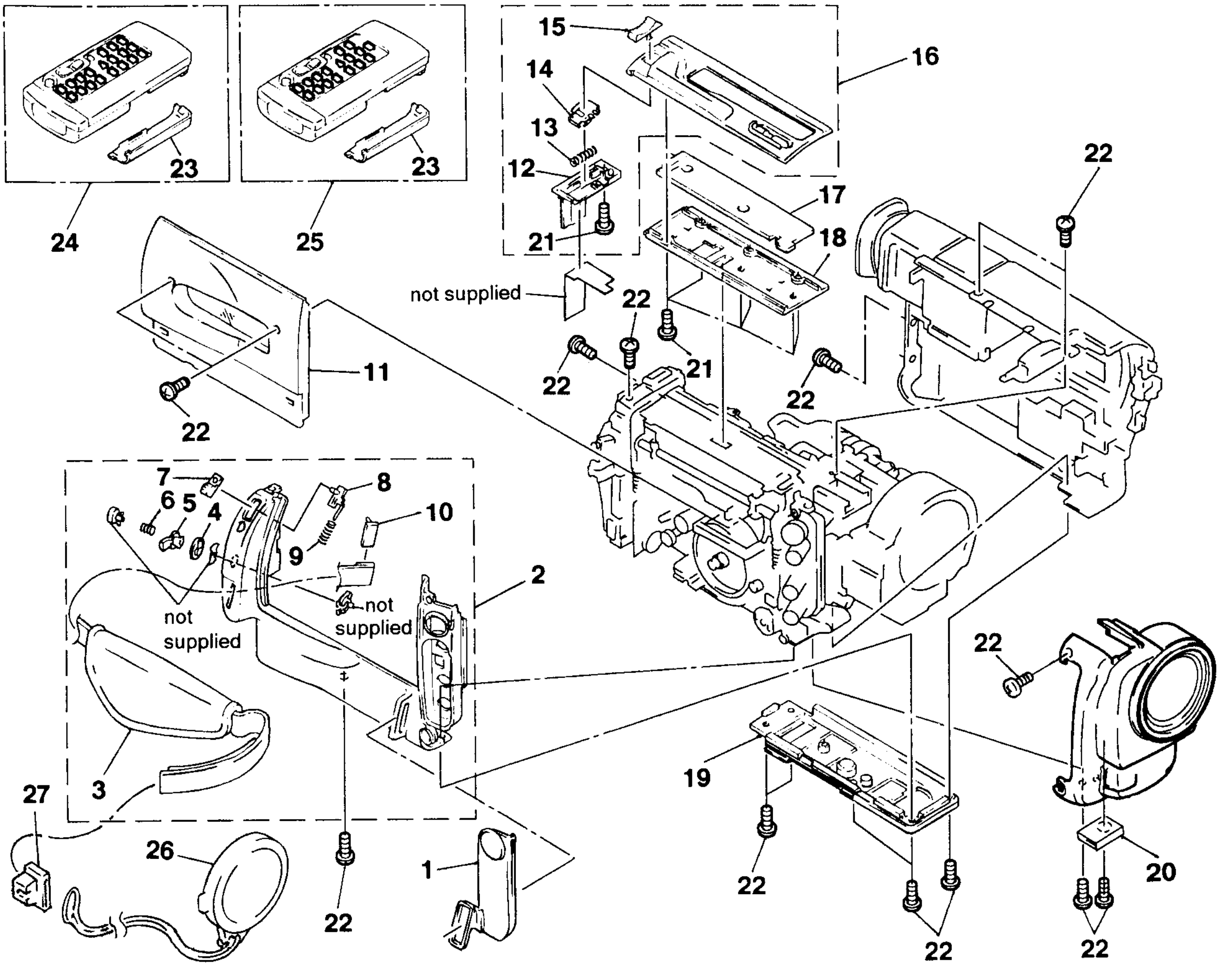
## 5-1. EXPLODED VIEWS

NOTE:

- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hong Kong model is abbreviated as HK.
- Tourist model is abbreviated as JE.
- Australian model is abbreviated as AUS.

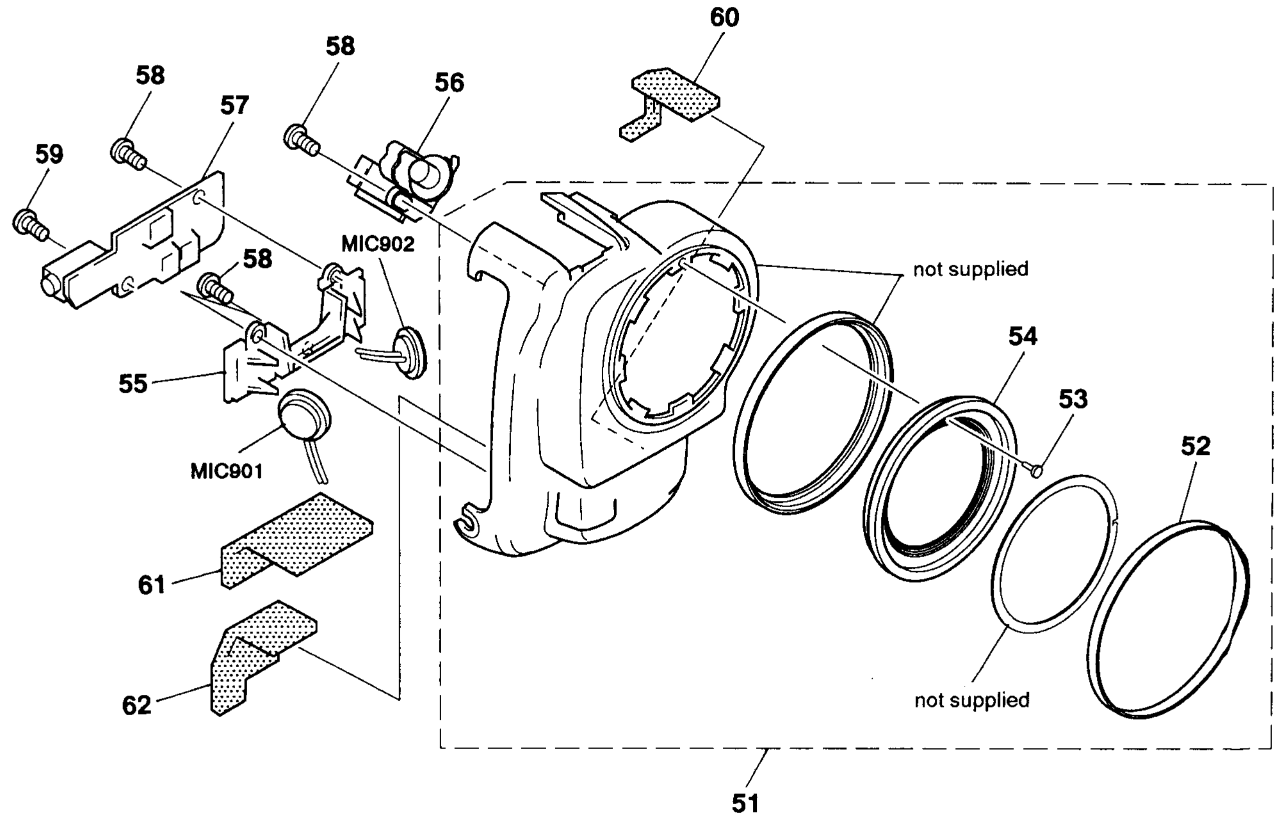
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

### 5-1-1. CABINET (L) BLOCK ASSEMBLY



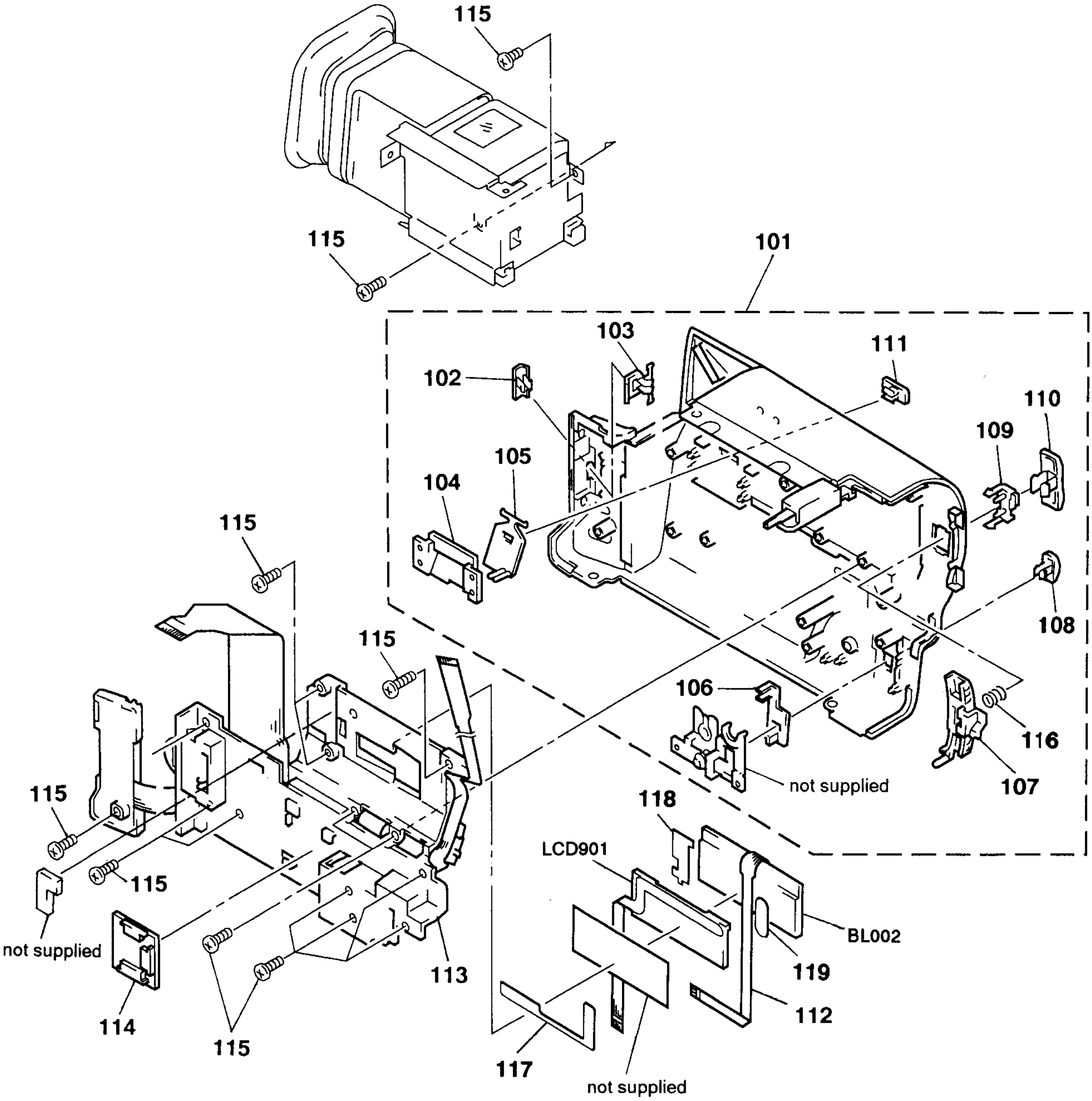
| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 1 | 3-970-389-01 | LID, JACK | |
| 2 | X-3946-304-1 | CABINET (L) ASSY | |
| 3 | 3-969-339-01 | BELT, GRIP | |
| 4 | 3-970-854-01 | SPRING, STAND-BY | |
| 5 | 3-969-081-01 | KNOB, STAND-BY | |
| 6 | 3-578-221-00 | SPRING, COMPRESSION | |
| 7 | 3-968-779-01 | BUTTON, EJECT | |
| 8 | 3-968-780-01 | LOCK, EJECT | |
| 9 | 3-302-492-00 | SPRING, COMPRESSION | |
| 10 | 3-942-895-01 | STOPPER, BELT | |
| 11 | X-3945-932-1 | LID ASSY, CASSETTE | |
| 12 | 3-968-773-01 | BASE, ZOOM | |
| 13 | 3-970-851-01 | SPRING, COMPRESSION | |
| 14 | 3-968-775-01 | SLIDER, ZOOM | |
| 15 | 3-968-774-01 | LEVER, ZOOM | |
| 16 | X-3945-930-1 | LS (UPPER) ASSY(TR2200E/TR3300E:AEP, UK) | |
| 16 | X-3946-017-1 | LS (UPPER) ASSY (TR2300E) | |
| 16 | X-3946-295-1 | LS (UPPER) ASSY (TR3300E:AUS, E) | |
| * 17 | A-7072-699-A | FK-67 (XCR) BOARD, COMPLETE (TR3300E:AUS, E) | |
| * 17 | A-7072-739-A | FK-67 (XP) BOARD, COMPLETE (TR2200E/TR3300E:AEP, UK) | |
| * 17 | A-7072-758-A | FK-67 (XCPE) BOARD, COMPLETE (TR2300E) | |
| 18 | 3-968-799-01 | LS (LOWER) | |
| 19 | X-3945-935-1 | BOTTOM ASSY, CABINET (TR2200E/TR3300E) | |
| 19 | X-3946-025-1 | BOTTOM ASSY, CABINET (TR2300E) | |
| 20 | 3-970-342-01 | LID, CPC | |
| 21 | 3-713-791-51 | SCREW (M1.7X3.5), TAPPING, P2 | |
| 22 | 3-719-381-01 | SCREW (M2X4) | |
| 23 | 3-742-854-01 | LID, BATTERY CASE (for RMT-715 or RMT-716) | |
| 24 | 8-917-540-90 | REMOCON RMT-715//M SET (TR2300E/TR3300E:AUS, E) | |
| 25 | 8-917-541-90 | REMOCON RMT-716//M SET (TR2200E/TR3300E:AEP, UK) | |
| 26 | X-3946-249-1 | CAP ASSY, LENS | |
| 27 | 3-970-638-01 | STOPPER, CAP | |

## 5-1-2. FRONT PANEL BLOCK ASSEMBLY


60
58
58
57
56
59
MIC902
58
not supplied
54
53
52
55
MIC901
61
62
not supplied
51

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 51 | X-3946-297-1 | PANEL ASSY, F (TR2300E) | |
| 51 | X-3946-303-1 | PANEL ASSY, F (TR2200E) | |
| 51 | X-3946-426-1 | PANEL ASSY, F (TR3300E:AUS, E) | |
| 51 | X-3946-427-1 | PANEL ASSY, F (TR3300E:AEP, UK) | |
| 52 | 3-970-329-01 | BAND, RING | |
| 53 | 3-965-060-01 | PIN, MF FIXED | |
| 54 | 3-965-098-01 | SCREW | |
| 55 | 3-970-341-01 | RETAINER, MICROHONE | |
| 56 | 1-473-691-11 | SWITCH BLOCK, CONTROL | |
| * 57 | A-7072-694-A | MA-269 (XCR) BOARD, COMPLETE | |
| 58 | 3-719-601-01 | SCREW (B2X5), TAPPING | |
| 59 | 3-713-786-21 | SCREW (M2X3) | |
| * 60 | 3-971-675-01 | CUSHION (1) | |
| * 61 | 3-971-677-01 | CUSHION (3) | |
| * 62 | 3-971-676-01 | CUSHION (2) | |
| MIC901 | 1-542-259-11 | MICROPHONE, CAP (Lch) | |
| MIC902 | 1-542-259-11 | MICROPHONE, CAP (Rch) | |

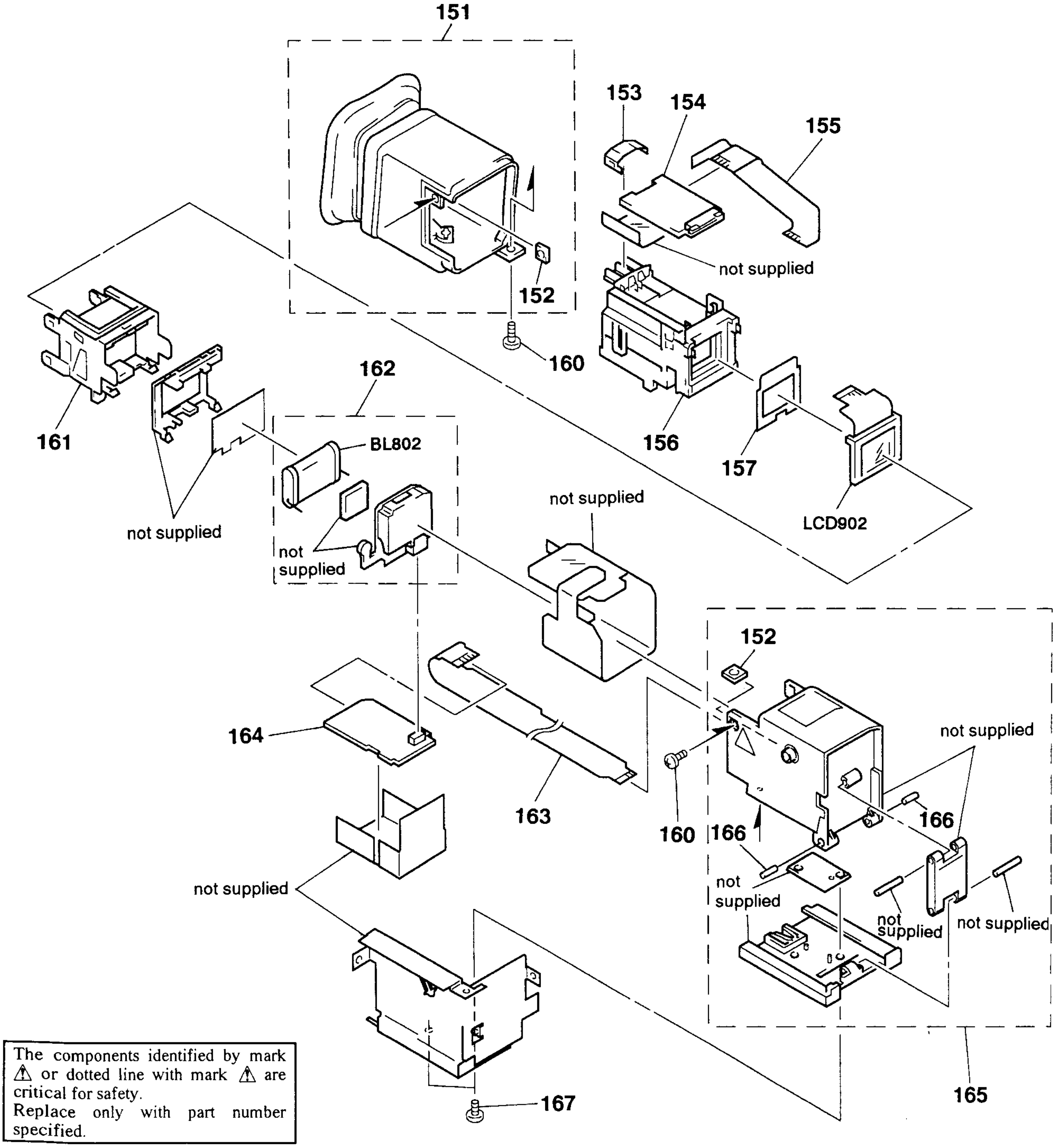
## 5-1-3. CABINET (R) BLOCK ASSEMBLY


115
115
101
103
111
102
110
109
105
104
115
108
115
106
116
not supplied
107
115
118
LCD901
115
BL002
not supplied
119
113
112
114
115
117
not supplied

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 101 | X-3946-263-1 | CABINET (R) ASSY (TR3300E:AUS, E) | |
| 101 | X-3946-293-1 | CABINET (R) ASSY (TR3300E:AEP, UK) | |
| 101 | X-3946-296-1 | CABINET (R) ASSY (TR2300E) | |
| 101 | X-3946-302-1 | CABINET (R) ASSY (TR2200E) | |
| 102 | 3-970-369-01 | KNOB, SS MODE | |
| 103 | 3-970-370-01 | RETAINER, SS MODE | |
| 104 | 3-970-359-01 | SLIDER, AUTO LOCK | |
| 105 | 3-970-344-01 | SLIDER, AUTO LOCK | |
| 106 | 3-970-362-01 | SLIDER, FOCUS | |
| 107 | 3-970-375-01 | SLIDER, POWER | |
| 108 | 3-970-350-01 | KNOB, FOCUS | |
| 109 | 3-970-349-01 | LOCK, POWER | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 110 | 3-970-348-01 | KNOB, POWER | |
| 111 | 3-970-355-01 | KNOB, AUTO LOCK | |
| 112 | 1-660-297-11 | FP-423 FLEXIBLE BOARD | |
| 113 | 1-473-603-11 | SWITCH BLOCK, CONTROL(CF-6400) | |
| * 114 | A-7072-698-A | LC-53 (XCR) BOARD, COMPLETE | |
| 115 | 3-719-601-01 | SCREW (B2X5), TAPPING | |
| 116 | 3-970-347-01 | SPRING, COMPRESSION | |
| * 117 | 3-971-741-01 | SHEET (LIGHT GUIDE PLATE)(TR3300E) | |
| * 118 | 3-971-742-01 | SHEET, LIGHT INTERCEPTION (TR3300E) | |
| * 119 | 3-971-743-01 | SHEET (LCD), ADHESIVE (TR3300E) | |
| BL002 | 1-517-527-11 | LIGHT, BACK | |
| LCD901 | 1-801-206-11 | DISPLAY PANEL, LIQUID CRYSTAL | |

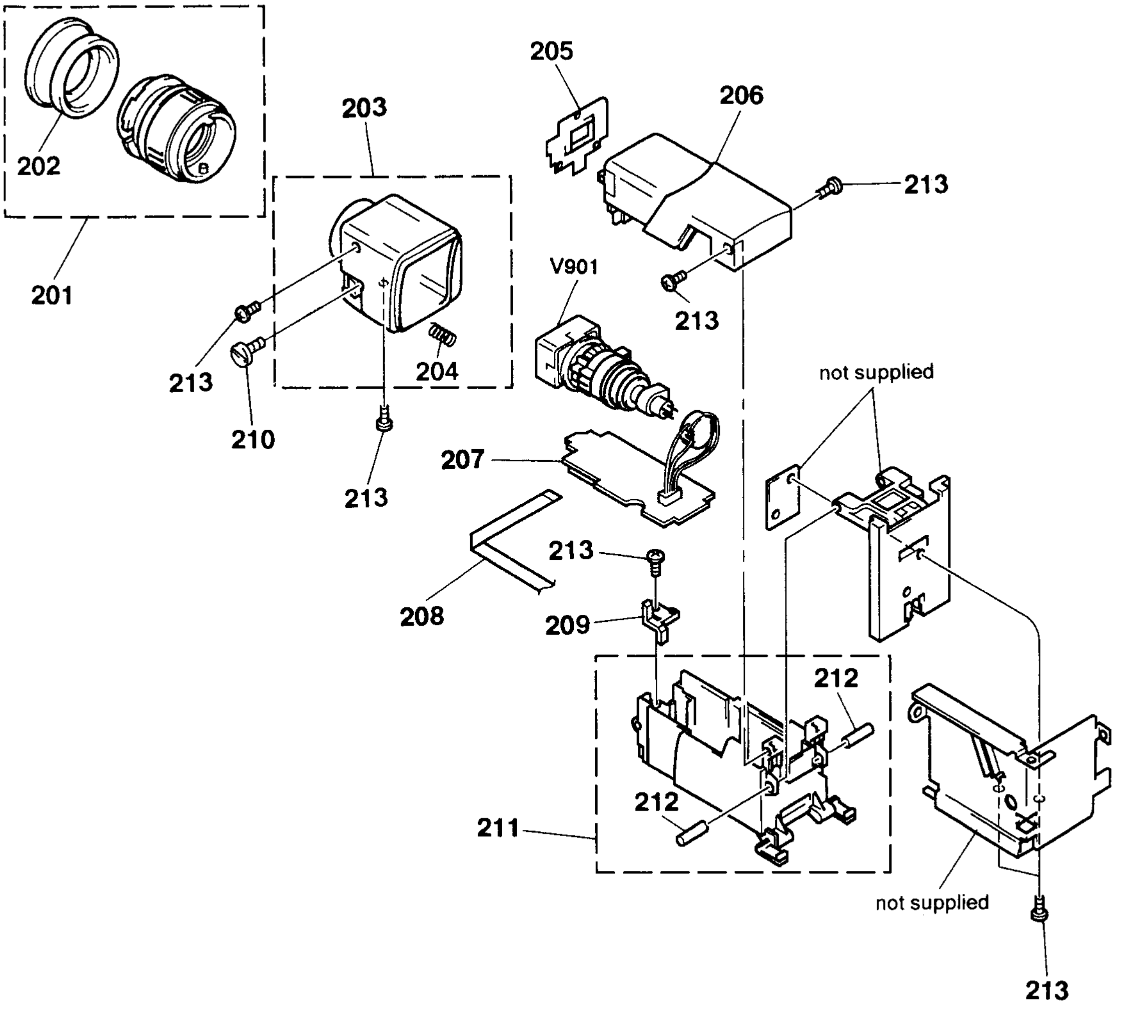
## 5-1-4. EVF BLOCK ASSEMBLY (COLOR) (TR2300E/TR3300E)


151
153
154
155
not supplied
152
160
162
BL802
161
not supplied
not
supplied
156
157
LCD902
not supplied
152
not supplied
164
163
160
166
166
not
supplied
not
supplied
not supplied
not supplied
165
167

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 151 | X-3946-298-1 | CABINET ASSY, EVF(REAR) | |
| 152 | 3-718-233-01 | NUT, PLATE | |
| * 153 | 3-969-176-01 | COVER, SENSOR | |
| * 154 | A-7072-756-A | VF-96 (XCPE) BOARD, COMPLETE | |
| 155 | 1-660-296-11 | FP-420 FLEXIBLE BOARD | |
| 156 | X-3946-253-1 | LENS ASSY, VF | |
| 157 | 3-965-056-01 | MASK, LCD | |
| 160 | 3-968-729-01 | SCREW (M2), LOCK ACE, P2 | |
| 161 | X-3946-254-1 | HOLDER ASSY, PRISM | |
| * 162 | A-7072-757-A | LB-45 (XCPE) BOARD, COMPLETE | |
| 163 | 1-660-285-11 | FP-386 FLEXIBLE BOARD | |
| * 164 | A-7072-755-A | VF-95 (XCPE) BOARD, COMPLETE | |
| 165 | X-3946-251-1 | CABINET ASSY, EVF (FRONT)(TR3300E) | |
| 165 | X-3946-387-1 | CABINET ASSY, EVF (FRONT)(TR2300E) | |
| 166 | 3-963-817-01 | SHAFT (1), TILT | |
| 167 | 3-719-381-01 | SCREW (M2X4) | |
| ⚠BL802 | 1-519-746-91 | TUBE, FLUORESCENT (0.7 INCH) | |
| LCD902 | 8-753-016-07 | LCX009AK-4 | |

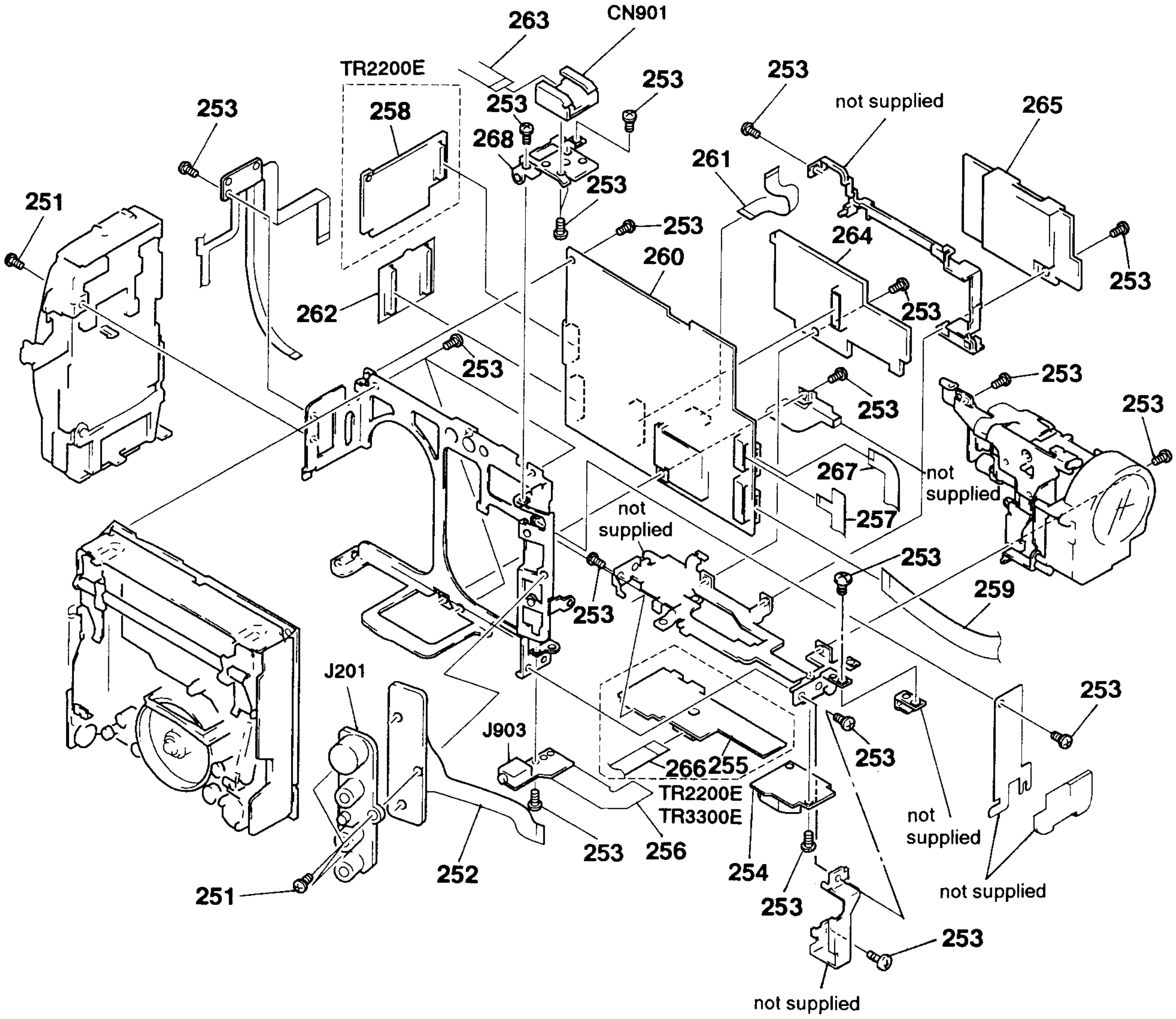
### 5-1-5. EVF BLOCK ASSEMBLY (WHITE/BLACK) (TR2200E)


205
206
203
213
202
201
V901
213
213
204
not supplied
210
207
213
213
208
209
212
212
211
not supplied
213

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

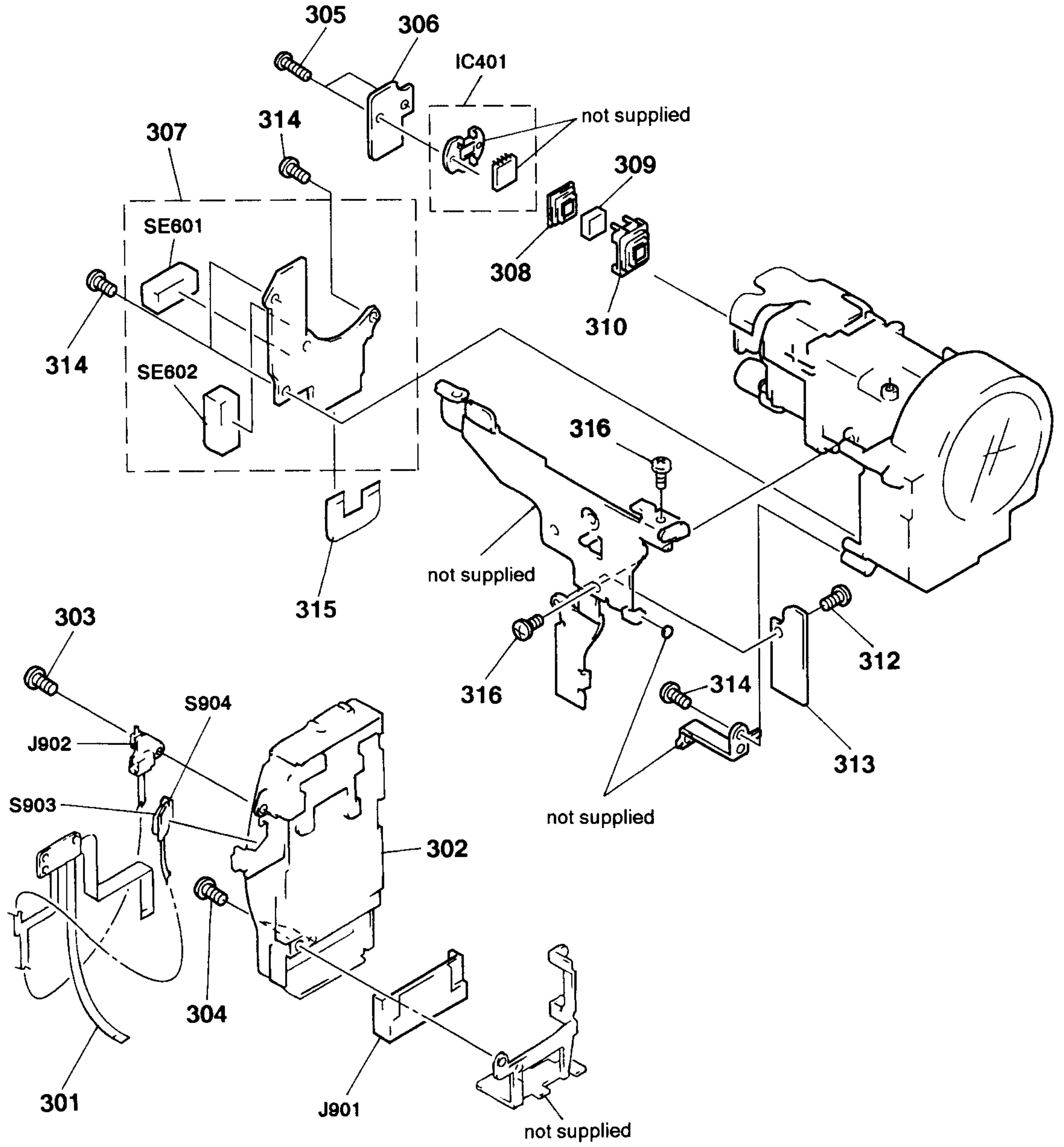
| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 201 | X-3944-966-1 | FINDER ASSY | |
| 202 | 3-963-391-01 | EYE CUP | |
| 203 | X-3946-300-1 | CABINET ASSY (W/B), EVF REAR | |
| 204 | 3-302-492-00 | SPRING, COMPRESSION | |
| 205 | 3-970-774-01 | COVER, CRT | |
| 206 | 3-970-776-01 | CABINET (UPPER)(W/B), VF | |
| * 207 | A-7066-841-A | VF-104 (XP) BOARD, COMPLETE | |
| 208 | 1-660-303-11 | FP-395 FLEXIBLE BOARD | |
| 209 | 3-970-775-01 | GUIDE (W/B), TALLY LIGHT | |
| 210 | 3-968-334-01 | SCREW, F LOCK | |
| 211 | X-3946-301-1 | CABINET ASSY (W/B), EVF LOWER | |
| 212 | 3-963-817-01 | SHAFT (1), TILT | |
| 213 | 3-719-601-11 | SCREW (B2X5), TAPPING | |
| ⚠V901 | 1-452-673-31 | CRT ASSY | |

### 5-1-6. MAIN BOARDS ASSEMBLY


263
CN901
TR2200E
253
258
253
253
268
not supplied
265
251
261
253
253
264
260
253
262
253
253
253
253
267
not supplied
257
not supplied
253
253
259
J201
253
J903
253
266
255
TR2200E
TR3300E
not supplied
253
256
254
252
253
not supplied
251
253
not supplied

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 251 | 3-719-381-01 | SCREW (M2X4) | |
| 252 | 1-660-278-11 | FP-378 FLEXIBLE BOARD | |
| 253 | 3-713-786-21 | SCREW (M2X3) | |
| * 254 | A-7072-690-A | LI-57 (XCR) BOARD, COMPLETE | |
| * 255 | A-7072-559-A | EZ-21 (HP) BOARD, COMPLETE | (TR2200E/TR3300E) |
| 256 | 1-660-279-11 | FP-379 FLEXIBLE BOARD | |
| 257 | 1-660-293-11 | FP-376 FLEXIBLE BOARD | |
| * 258 | A-7072-700-A | MM-32 (XCR) BOARD, COMPLETE (TR3300E) | |
| 259 | 1-661-228-11 | FP-462 FLEXIBLE BOARD | |
| * 260 | A-7092-915-A | VC-177 (XP) BOARD, COMPLETE (TR2200E) | |
| * 260 | A-7092-932-A | VC-177 (XCPE) BOARD, COMPLETE (TR2300E) | |
| * 260 | A-7092-986-A | VC-177 (XCRP) BOARD, COMPLETE | (TR3300E:AEP, UK) |
| * 260 | A-7092-987-A | VC-177 (XCRPE) BOARD, COMPLETE | (TR3300E:AUS, E) |
| 261 | 1-660-295-11 | FP-419 FLEXIBLE BOARD | |
| 262 | 1-660-283-11 | FP-383 FLEXIBLE BOARD | |
| 263 | 1-660-300-11 | FP-426 FLEXIBLE BOARD | |
| * 264 | A-7092-917-A | HI-40 (XP) BOARD, COMPLETE (TR2200E) | |
| * 264 | A-7092-933-A | HI-40 (XCPE) BOARD, COMPLETE | (TR2300E/TR3300E) |
| * 265 | A-7092-871-A | DD-87 (XCR) BOARD, COMPLETE | (TR2300E/TR3300E) |
| * 265 | A-7092-916-A | DD-87 (XP) BOARD, COMPLETE (TR2200E) | |
| 266 | 1-660-298-11 | FP-401 FLEXIBLE BOARD | |
| 267 | 1-660-531-11 | FP-429 FLEXIBLE BOARD | |
| 268 | 3-970-339-01 | BRACKET, SHOE | |
| CN901 | 1-774-867-11 | CONNECTOR, EXTERNAL (HOT SHOE) 8P | |
| J201 | 1-537-747-21 | TERMINAL BOARD | |
| J903 | 1-695-514-21 | JACK (SMALL TYPE) 1P (HEADPHONE) | |

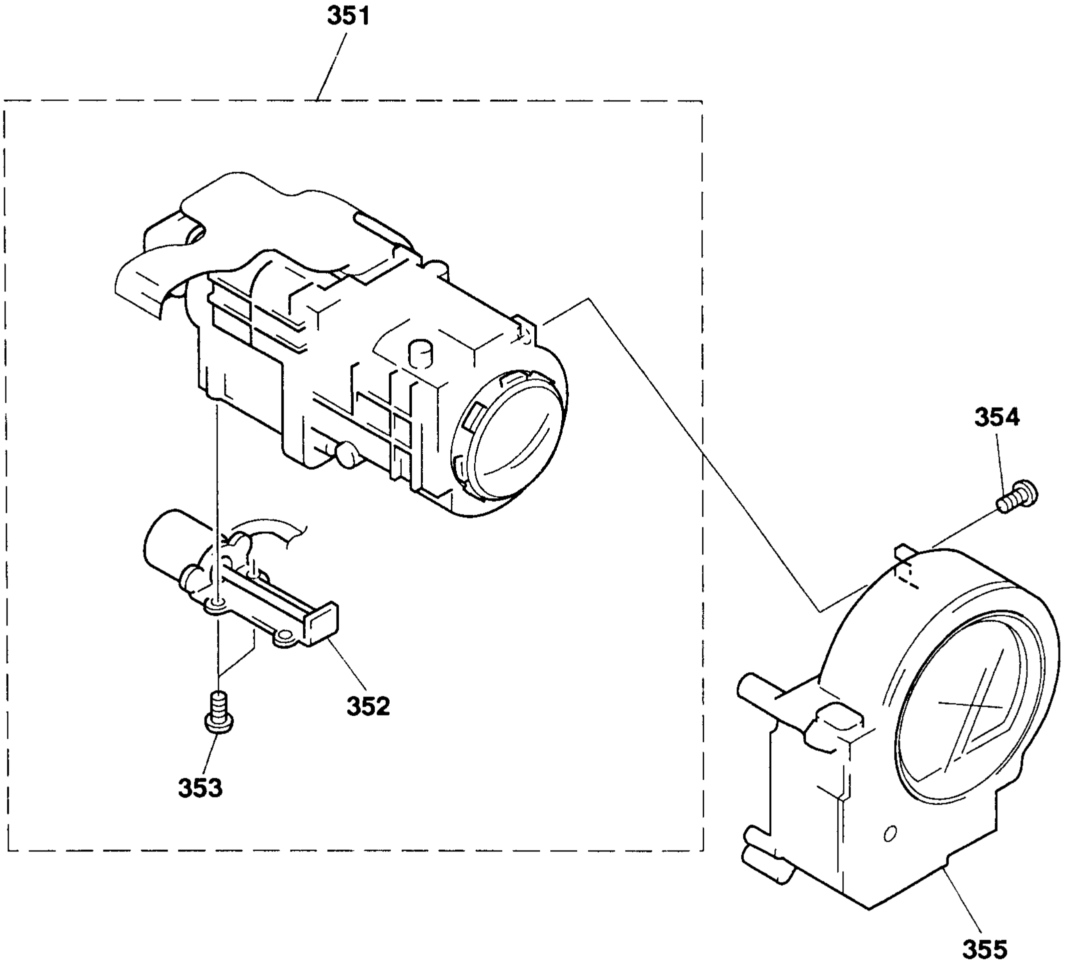
## 5-1-7. BATTERY PANEL BLOCK ASSEMBLY AND CCD BLOCK ASSEMBLY


305
306
IC401
307
314
not supplied
309
SE601
308
310
314
SE602
316
not supplied
315
303
312
S904
316
314
J902
313
S903
not supplied
302
304
301
J901
not supplied

Be sure to read "Note on the CCD Imager replacement" on page 4–8 when changing the CCD imager.

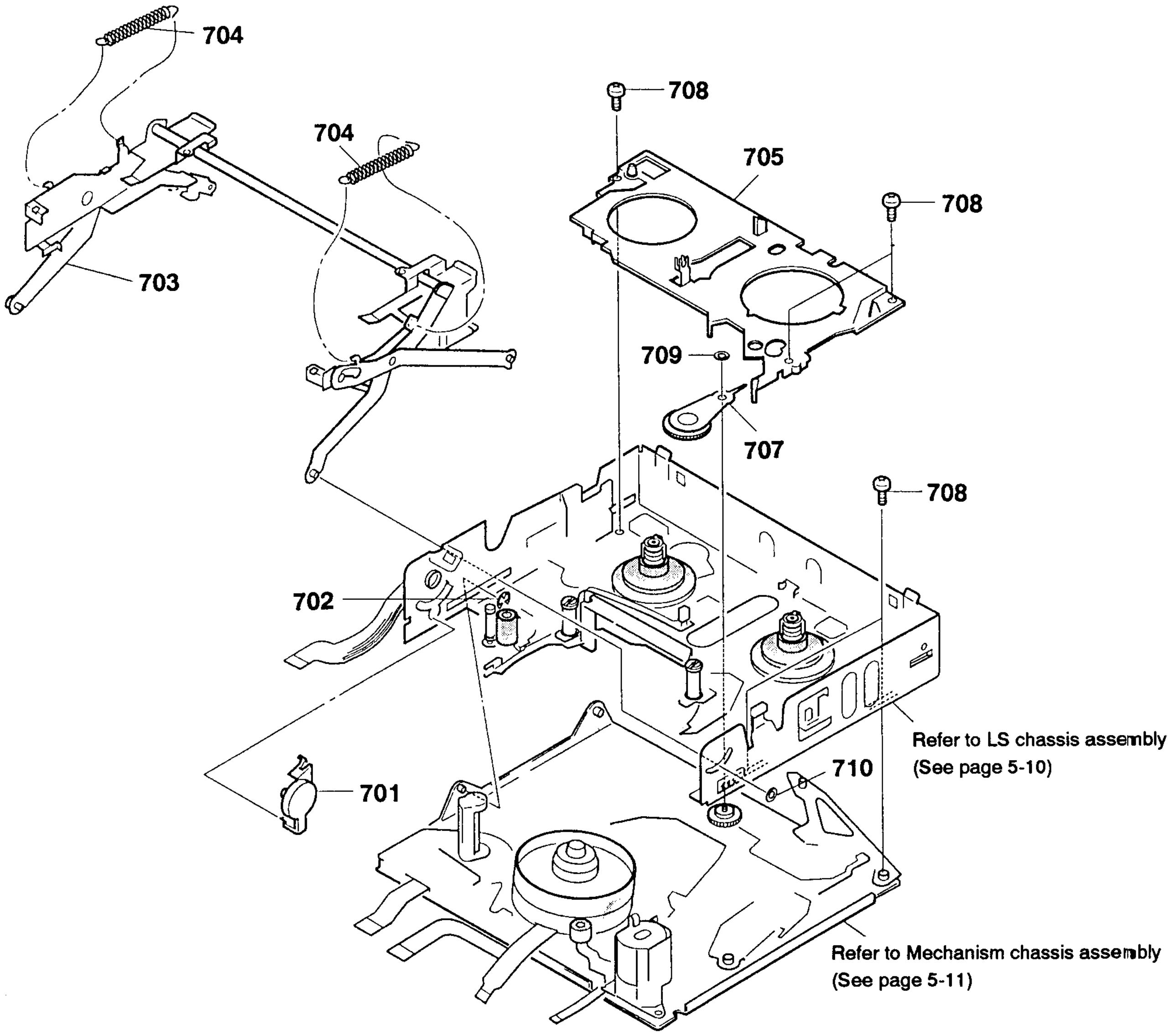
| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 301 | 1-661-052-11 | FP-457 FLEXIBLE BOARD | |
| 302 | X-3945-929-1 | PANEL ASSY, BATTERY | |
| 303 | 3-719-381-01 | SCREW (M2X4) | |
| 304 | 3-968-729-01 | SCREW (M2), LOCK ACE, P2 | |
| 305 | 3-318-203-11 | SCREW (B1.7X6), TAPPING | |
| * 306 | A-7072-691-A | CD-149 (XCR) BOARD, COMPLETE | |
| * 307 | A-7072-692-A | VP-45 (XCR) BOARD, COMPLETE | |
| 308 | 3-968-054-11 | RUBBER (FM), SHIELD | |
| 309 | 1-547-767-41 | FILTER BLOCK, OPTICAL | |
| 310 | 3-963-467-11 | ADAPTOR (FH), CCD FITTING | |
| 312 | 3-713-786-21 | SCREW (M2X3) | |
| * 313 | A-7072-693-A | AV-36 (XCR) BOARD, COMPLETE (TR2300E/TR3300E:AUS, E) | |
| * 313 | A-7072-740-A | AV-36 (XP) BOARD, COMPLETE (TR2200E/TR3300E:AEP, UK) | |
| 314 | 3-719-601-01 | SCREW (B2X5), TAPPING | |
| 315 | 1-660-294-11 | FP-400 FLEXIBLE BOARD | |
| 316 | 3-713-791-01 | SCREW (M1.7X4) | |
| IC401 | A-7030-744-A | CCD BLOCK ASSY (AUTO) (079 SERVICE) (CCD IMAGER) | |
| J901 | 1-694-076-11 | TERMINAL BOARD, BATTERY (TR2300E) | |
| J901 | 1-694-076-21 | TERMINAL BOARD, BATTERY (TR2200E/TR3300E) | |
| J902 | 1-565-276-21 | JACK, ULTRA SMALL 1P (LANC) | |
| S903 | 1-571-315-11 | SWITCH, KEY BOARD (START/STOP) | |
| S904 | 1-553-977-00 | SWITCH, SLIDE (STANDBY/LOCK) | |
| SE601 | 1-810-889-81 | SENSOR, ANGULAR VELOCITY (PITCH) | |
| SE602 | 1-810-889-71 | SENSOR, ANGULAR VELOCITY (YAW) | |

### 5-1-8. ZOOM LENS (VCL-4020VA) BLOCK ASSEMBLY



| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 351 | 3-709-110-01 | MAIN TUBE, MIRROR UNIT | |
| 352 | 3-709-111-01 | MOTOR, FOCUS | |
| 353 | 3-707-946-01 | SCREW 1.7X4.5 | |
| 354 | 3-708-249-01 | SCREW, VAP UNIT | |
| 355 | A-7030-757-A | VAP UNIT | |

### 5-1-9. CASSETTE COMPARTMENT ASSEMBLY

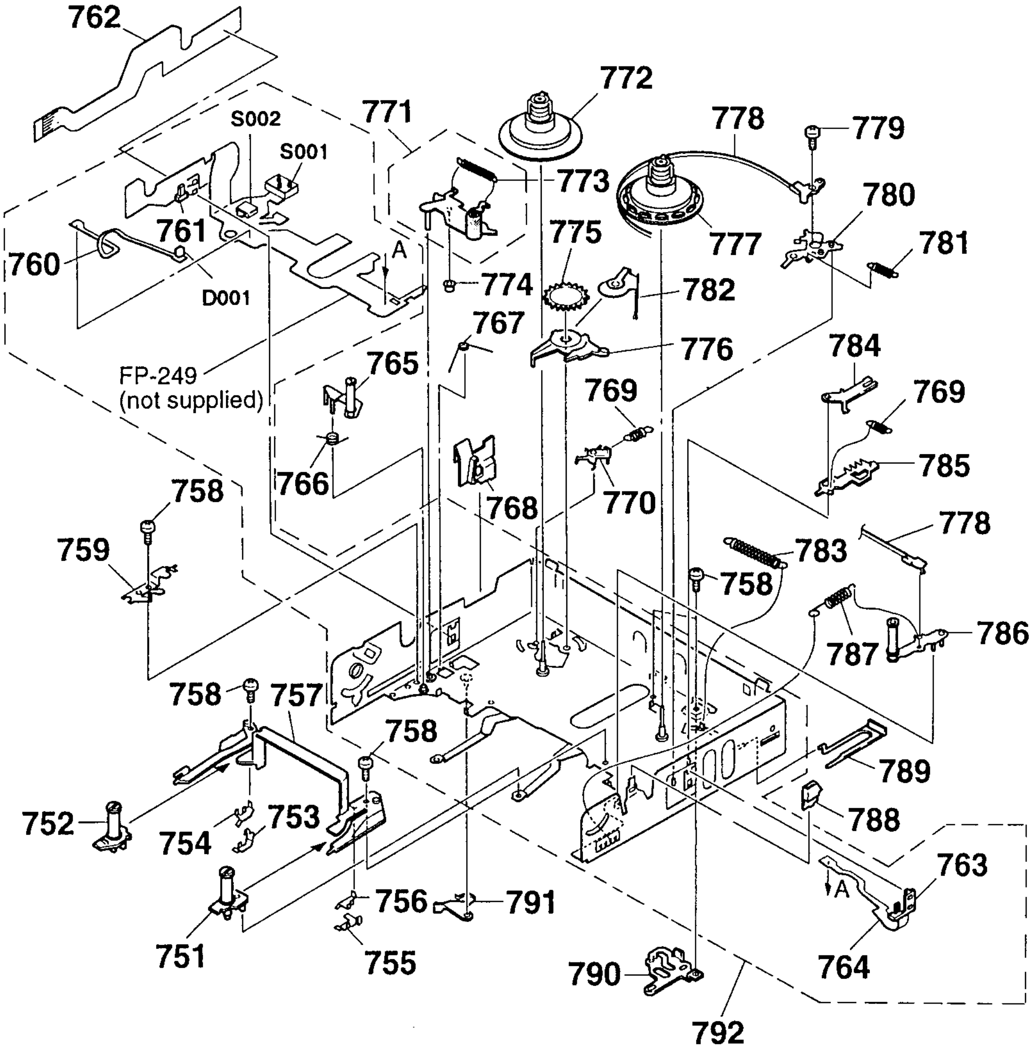


Refer to LS chassis assembly (See page 5-10)

Refer to Mechanism chassis assembly (See page 5-11)

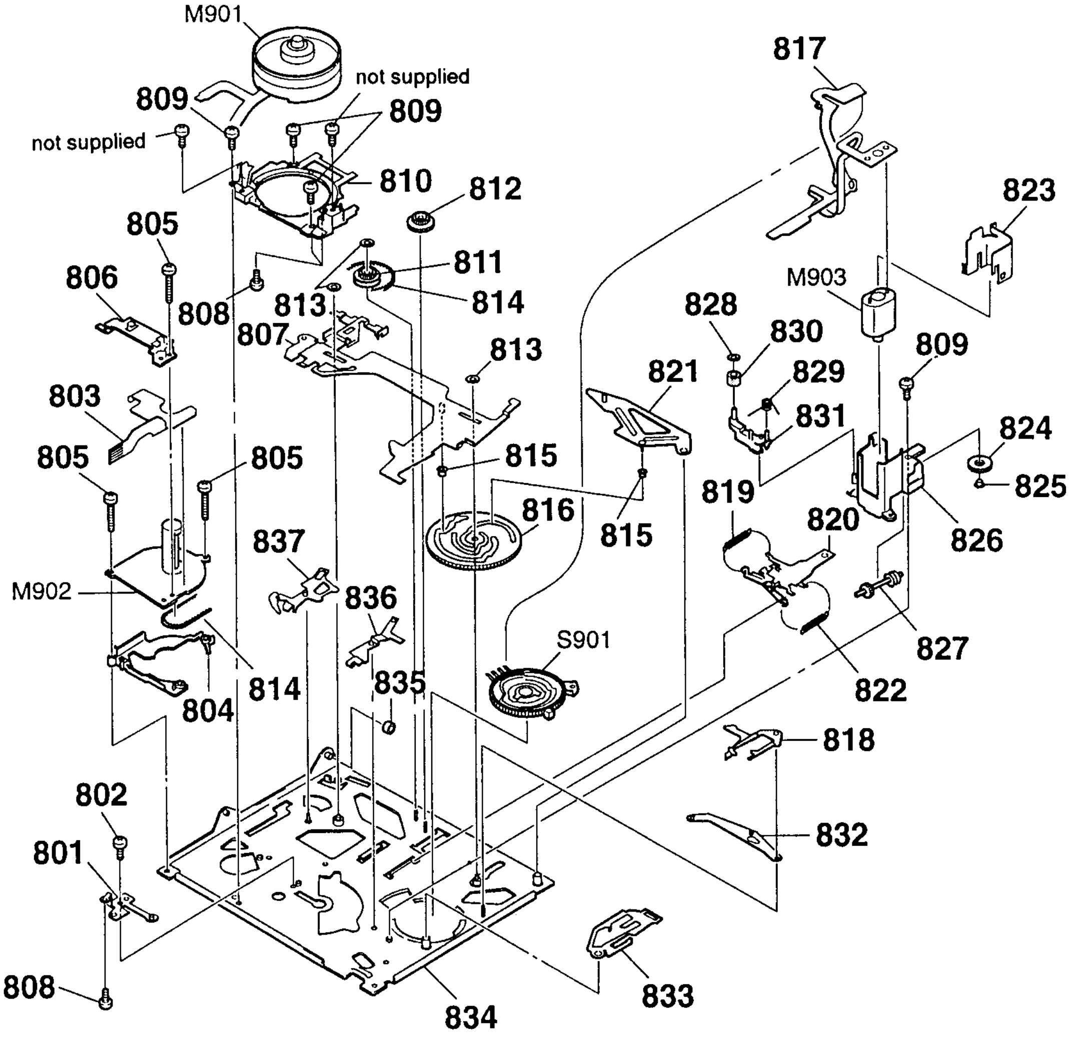
| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 701 | A-7040-421-A | DAMPER ASSY | |
| 702 | 7-624-102-04 | STOP RING 1.5, TYPE -E | |
| 703 | X-3945-400-1 | CASSETTE COMPARTMENT ASSY | |
| 704 | 3-965-587-01 | SPRING, TENSION | |
| 705 | 3-965-584-01 | RETAINER, GOOSENECK | |
| 707 | X-3945-399-1 | GEAR ASSY, GOOSENECK | |
| 708 | 3-947-503-01 | SCREW (M1.4X2.5) | |
| 709 | 3-331-007-21 | WASHER | |
| 710 | 3-727-176-01 | WASHER, STOPPER | |

### 5-1-10. LS CHASSIS ASSEMBLY


762
772
771
S002
S001
778
779
773
780
761
775
777
781
760
774
782
D001
767
776
A
765
784
FP-249
(not supplied)
769
769
785
758
766
768
770
778
759
783
758
786
787
758
757
758
789
752
753
754
788
763
A
756
791
751
755
790
764
792

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 751 | A-7040-419-A | BASE (S) BLOCK ASSY, GUIDE | |
| 752 | A-7040-418-A | BASE (T) BLOCK ASSY, GUIDE | |
| 753 | 3-965-559-01 | STOPPER (T) | |
| 754 | 3-965-557-01 | STOPPER (T), GB | |
| 755 | 3-965-558-01 | STOPPER (S) | |
| 756 | 3-965-556-01 | STOPPER (S), GB | |
| 757 | 3-965-553-01 | RAIL, GUIDE | |
| 758 | 3-947-503-01 | SCREW (M1.4X2.5) | |
| 759 | 3-965-573-01 | RETAINER, TG4 | |
| 760 | 1-658-213-11 | FP-355 FLEXIBLE BOARD | |
| 761 | 3-965-552-01 | HOLDER (T), SENSOR | |
| 762 | 1-657-786-11 | FP-221 FLEXIBLE BOARD | |
| 763 | 3-965-551-01 | HOLDER (S), SENSOR | |
| 764 | 1-658-214-11 | FP-356 FLEXIBLE BOARD | |
| 765 | A-7040-417-A | ARM BLOCK ASSY, TG4 | |
| 766 | 3-965-574-01 | SPRING, TORSION | |
| 767 | 3-965-575-01 | SPRING (PINCH), TORSION | |
| 768 | 3-965-568-01 | GUIDE, LOCK | |
| 769 | 3-965-562-01 | SPRING (RATCHET), TENSION | |
| 770 | 3-965-581-01 | RATCHET, T | |
| 771 | X-3945-394-1 | ARM ASSY, PINCH | |
| 772 | X-3945-398-1 | DECK ASSY, REEL, T | |
| 773 | 3-965-648-01 | SPRING (PINCH), TENSION | |
| 774 | 3-965-579-01 | ROLLER, PINCH PRESS | |
| 775 | 3-965-563-01 | GEAR, T SOFT | |
| 776 | 3-965-565-01 | CLAW, T SOFT | |
| 777 | X-3945-397-1 | DECK ASSY, REEL, S | |
| 778 | X-3945-396-1 | BAND ASSY, TENSION REGULATOR | |
| 779 | 3-945-756-01 | SCREW (M1.4X3) | |
| 780 | 3-965-583-01 | ARM, RVS | |
| 781 | 3-965-580-01 | SPRING, TENSION | |
| 782 | 3-966-384-01 | SPRING, T SOFT | |
| 783 | 3-965-578-01 | SPRING, TENSION | |
| 784 | 3-965-560-01 | RATCHET, S | |
| 785 | 3-965-561-01 | PLATE, RELEASE, S RATCHET | |
| 786 | X-3945-395-1 | ARM ASSY, TG1 | |
| 787 | 3-965-576-01 | SPRING (TG1), TENSION | |
| 788 | 3-965-567-01 | LID OPEN | |
| 789 | 3-965-566-01 | COVER, LS GUIDE | |
| * 790 | 3-965-577-01 | PLATE, CAM, LS | |
| 791 | 3-965-569-01 | ARM, EJ | |
| 792 | A-7040-427-A | CHASSIS (S1) ASSY, LS | |
| D001 | 8-719-988-42 | DIODE GL453 | |
| S001 | 1-692-614-11 | SWITCH, PUSH (3 KEY) (Hi8 MP, ME/MP, REC PROOF) | |
| S002 | 1-572-688-11 | SWITCH, PUSH (1 KEY)(C.C. LOCK) | |

## 5-1-11. MECHANISM CHASSIS ASSEMBLY


M901
not supplied
809
809
not supplied
810
812
817
823
805
806
811
814
808
813
807
813
M903
828
830
809
821
829
803
831
824
805
805
815
825
816
819
820
826
837
815
M902
836
S901
827
814
835
822
804
818
802
801
832
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834
833

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 801 | 3-965-525-01 | GROUND, SHAFT | |
| 802 | 3-965-550-02 | SCREW (M1.7X1.6) | |
| 803 | 1-657-785-11 | FP-248 FLEXIBLE BOARD | |
| 804 | 3-965-545-01 | SPACER, CAPSTAN | |
| 805 | 3-965-549-01 | SCREW (M1.4 X 6.5) | |
| 806 | 3-966-349-01 | HOLDER, FLEXIBLE | |
| 807 | X-3945-387-1 | SLIDER ASSY, M | |
| 808 | 3-965-588-01 | SCREW (M1.4) | |
| 809 | 3-947-503-01 | SCREW (M1.4X2.5) | |
| 810 | A-7040-416-A | BASE BLOCK ASSY, DRUM | |
| 811 | 3-965-527-01 | GEAR, CHANGE | |
| 812 | 3-965-544-01 | GEAR, RELAY | |
| 813 | 3-331-007-21 | WASHER | |
| 814 | 3-965-546-01 | BELT, TIMING | |
| 815 | 3-965-533-01 | ROLLER, LS | |
| 816 | 3-965-528-01 | GEAR, CAM | |
| 817 | 1-657-784-11 | FP-220 FLEXIBLE BOARD | |
| 818 | 3-965-529-01 | PLATE, REGULATOR, TENSION | |
| 819 | 3-965-536-01 | SPRING, TENSION | |
| 820 | X-3945-388-1 | SLIDER ASSY, GL | |
| 821 | 3-965-532-01 | ARM, LS | |
| 822 | 3-965-535-01 | SPRING, TENSION | |
| 823 | 3-965-542-01 | SHIELD, MOTOR | |
| 824 | 3-965-539-01 | GEAR (A) | |
| 825 | 3-965-538-01 | SLEEVE, MOTOR HOLDER | |
| 826 | 3-965-540-01 | HOLDER, MOTOR | |
| 827 | 3-965-541-01 | SHAFT, WORM | |
| 828 | 3-321-393-01 | WASHER, STOPPER | |
| 829 | 3-965-724-01 | SPRING, TORSION | |
| 830 | A-7040-423-A | ROLLER BLOCK ASSY, HC | |
| 831 | X-3945-407-1 | ARM ASSY, HC ROLLER | |
| 832 | 3-965-531-01 | ARM, GL | |
| 833 | 3-965-530-01 | PLATE (2), REGULATOR, TENSION | |
| 834 | X-3945-386-1 | CHASSIS ASSY, MECHANICAL | |
| 835 | 3-965-526-01 | ROLLER, LS GUIDE | |
| 836 | 3-965-547-01 | ARM, HC DRIVING | |
| 837 | 3-965-534-01 | PLATE, PRESS, PINCH | |
| M901 | A-7048-810-A | DRUM ASSY (DGH-0C4A-R) | |
| M902 | 8-835-531-01 | MOTOR, DC SCE-0601A (CAPSTAN) | |
| M903 | X-3945-401-1 | MOTOR ASSY, DC (LOADING) | |
| S901 | 1-762-436-15 | SWITCH, ROTARY (ENCODER) | |

# AV-36 CD-149

## 5-2. ELECTRICAL PARTS LIST

NOTE:

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board name.

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX, -X mean standardized parts, so they may have some difference from the original one.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- RESISTORS
  All resistors are in ohms
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F : nonflammable
- SEMICONDUCTORS
  In each case, u: μ , for example:
  uA...: μA..., uPA...: μPA..., uPB...: μPB..., uPC...: μPC..., uPD...: μPD...
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Hong Kong model is abbreviated as HK.
- Tourist model is abbreviated as JE.
- Australian model is abbreviated as AUS.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-693-A | AV-36 (XCR) BOARD, COMPLETE | |
| | | (TR2300E/TR3300E:AUS, E) | |
| | | *************************** | |
| * | A-7072-740-A | AV-36 (XP) BOARD, COMPLETE | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| | | ************************** | |
| | | (Ref. No. 3,000 Series) | |
| | | < CAPACITOR > | |
| C251 | 1-110-569-11 | TANTAL. CHIP 47uF 20% 6.3V | |
| C252 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| C253 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| C254 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| C255 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| C263 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| C264 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| | | (TR2200E/TR3300E:AEP, UK) | |
| | | < CONNECTOR > | |
| CN251 | 1-766-344-21 | CONNECTOR, FFC/FPC 14P | |
| CN252 | 1-573-923-21 | CONNECTOR, FFC/FPC (ZIF) 14P | |
| | | < DIODE > | |
| D251 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D252 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D253 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D254 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D255 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D256 | 8-719-420-14 | DIODE MA8082-M | |
| | | < COIL > | |
| L251 | 1-414-072-11 | INDUCTOR 1uH | |
| L252 | 1-412-963-11 | INDUCTOR 100uH (TR2200E/TR3300E:AEP, UK) | |
| L253 | 1-412-963-11 | INDUCTOR 100uH (TR2200E/TR3300E:AEP, UK) | |
| L254 | 1-412-963-11 | INDUCTOR 100uH (TR2200E/TR3300E:AEP, UK) | |
| | | < TRANSISTOR > | |
| Q251 | 8-729-101-07 | TRANSISTOR 2SB798-DL | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| Q252 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| | | < RESISTOR > | |
| R251 | 1-216-138-00 | METAL CHIP 3.3 5% 1/8W | |
| R252 | 1-216-830-11 | METAL CHIP 5.6K 5% 1/16W | |
| R253 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R254 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R255 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| | | (TR2300E/TR3300E:AUS, E) | |
| R256 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| | | (TR2300E/TR3300E:AUS, E) | |
| R257 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R258 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R259 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R260 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| | | (TR2300E/TR3300E:AUS, E) | |
| R261 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R262 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R263 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R264 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-691-A | CD-149 (XCR) BOARD, COMPLETE | |
| | | **************************** | |
| | | (Ref. No. 3,000 Series) | |
| | | (IC401 is not included to the mounted board.) | |
| | | < CAPACITOR > | |
| C401 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C405 | 1-107-686-11 | TANTAL. CHIP 4.7uF 20% 16V | |
| C406 | 1-107-686-11 | TANTAL. CHIP 4.7uF 20% 16V | |
| | | < CONNECTOR > | |
| CN401 | 1-766-627-21 | CONNECTOR, FFC/FPC 16P | |
| | | < IC > | |
| IC401 | A-7030-744-A | CCD BLOCK ASSY (AUTO)(079 SERVICE) | |
| | | (CCD IMAGER) | |

**Be sure to read "Note on the CCD Imager replacement" on page 4-8 when changing the CCD imager.**

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < COIL > | | | |
| L401 | 1-412-963-11 | INDUCTOR 100uH | | | |
| | | < TRANSISTOR > | | | |
| Q401 | 8-729-232-86 | TRANSISTOR | 2SK1875-BL/V | | |
| Q402 | 8-729-117-73 | TRANSISTOR | 2SC4178-F14 | | |
| | | < RESISTOR > | | | |
| R403 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W |
| R404 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W |
| R407 | 1-216-295-91 | CONDUCTOR, CHIP (2012) | | | |
| * | A-7092-871-A | DD-87 (XCR) BOARD, COMPLETE | | | (TR2300E/TR3300E) |
| | | *************************** | | | |
| * | A-7092-916-A | DD-87 (XP) BOARD, COMPLETE (TR2200E) | | | |
| | | ************************** | | | |
| | | | | | (Ref. No. 20,000 Series) |
| | | < CAPACITOR > | | | |
| C1501 | 1-135-159-21 | TANTALUM CHIP | 10uF | 10% | 20V |
| C1502 | 1-135-159-21 | TANTALUM CHIP | 10uF | 10% | 20V |
| C1503 | 1-135-165-11 | TANTAL. CHIP | 33uF | 20% | 16V |
| C1504 | 1-135-159-21 | TANTALUM CHIP | 10uF | 10% | 20V |
| C1506 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1507 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V |
| C1508 | 1-162-960-11 | CERAMIC CHIP | 220PF | 10% | 50V |
| C1509 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1510 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1511 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1512 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1513 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1514 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1515 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1519 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1520 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1522 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V |
| C1523 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1524 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1525 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1526 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1529 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1530 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1531 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1532 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1533 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1534 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1535 | 1-135-216-11 | TANTALUM CHIP | 10uF | 20% | 10V |
| C1536 | 1-135-216-11 | TANTALUM CHIP | 10uF | 20% | 10V |
| C1537 | 1-135-216-11 | TANTALUM CHIP | 10uF | 20% | 10V |
| C1538 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C1539 | 1-164-505-11 | CERAMIC CHIP | 2.2uF | | 16V |
| C1540 | 1-135-214-21 | TANTAL. CHIP | 4.7uF | 20% | 20V |
| C1541 | 1-113-985-11 | TANTAL. CHIP | 10uF | 20% | 20V |
| C1542 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1543 | 1-165-178-11 | CERAMIC CHIP | 6.8uF | | 16V |
| C1544 | 1-104-752-11 | TANTAL. CHIP | 33uF | 20% | 6.3V |
| C1545 | 1-135-216-11 | TANTALUM CHIP | 10uF | 20% | 10V |
| C1546 | 1-135-216-11 | TANTALUM CHIP | 10uF | 20% | 10V |
| C1547 | 1-135-216-11 | TANTALUM CHIP | 10uF | 20% | 10V |
| C1548 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| | | | | | (TR2300E/TR3300E) |
| C1549 | 1-164-361-11 | CERAMIC CHIP | 0.047uF | | 16V |
| | | | | | (TR2300E/TR3300E) |
| C1550 | 1-164-489-11 | CERAMIC CHIP | 0.22uF | 10% | 16V |
| C1551 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| | | < CONNECTOR > | | | |
| CN1501 | 1-569-775-21 | PIN, CONNECTOR 5P | | | |
| CN1503 | 1-691-542-21 | CONNECTOR, BOARD TO BOARD 48P | | | |
| | | < DIODE > | | | |
| D1501 | 8-719-027-77 | DIODE | MA796-TX | | |
| D1502 | 8-719-404-49 | DIODE | MA111 | | |
| D1503 | 8-719-420-14 | DIODE | MA8082-M | | |
| | | < IC > | | | |
| IC1501 | 8-759-350-29 | IC | SN104213PM-T6 | | |
| | | < COIL > | | | |
| L1501 | 1-424-653-11 | COIL, CHOKE 10uH | | | |
| L1502 | 1-424-653-11 | COIL, CHOKE 10uH | | | |
| L1503 | 1-424-653-11 | COIL, CHOKE 10uH | | | |
| L1504 | 1-424-674-11 | COIL, CHOKE 22uH | | | |
| L1505 | 1-424-675-11 | COIL, CHOKE 33uH | | | |
| L1506 | 1-424-674-11 | COIL, CHOKE 22uH | | | |
| L1507 | 1-424-674-11 | COIL, CHOKE 22uH | | | |
| L1508 | 1-412-056-11 | INDUCTOR CHIP 4.7uH | | | |
| L1509 | 1-412-056-11 | INDUCTOR CHIP 4.7uH | | | |
| L1510 | 1-412-056-11 | INDUCTOR CHIP 4.7uH | | | |
| L1511 | 1-412-066-21 | INDUCTOR CHIP 220uH | | | |
| L1512 | 1-424-674-11 | COIL, CHOKE 22uH | | | |
| L1513 | 1-412-060-11 | INDUCTOR CHIP 22uH | | | |
| L1514 | 1-412-056-11 | INDUCTOR CHIP 4.7uH | | | |
| L1515 | 1-412-060-11 | INDUCTOR CHIP 22uH | | | |
| L1516 | 1-412-056-11 | INDUCTOR CHIP 4.7uH | | | |

< IC LINK >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| ⚠PS1501 | 1-533-711-21 | LINK, IC (1.25A)(SMD) | |
| ⚠PS1502 | 1-533-711-21 | LINK, IC (1.25A)(SMD) | |
| ⚠PS1503 | 1-533-711-21 | LINK, IC (1.25A)(SMD) | |
| ⚠PS1504 | 1-533-711-21 | LINK, IC (1.25A)(SMD) | |

< TRANSISTOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| Q1501 | 8-729-033-14 | TRANSISTOR FP107-TL | |
| Q1502 | 8-729-033-14 | TRANSISTOR FP107-TL | |
| Q1503 | 8-729-033-14 | TRANSISTOR FP107-TL | |
| Q1504 | 8-729-033-14 | TRANSISTOR FP107-TL | |
| Q1505 | 8-729-030-75 | TRANSISTOR 2SK2316-TD | |
| Q1506 | 8-729-804-41 | TRANSISTOR 2SB1122-S | |
| Q1507 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1508 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1509 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1510 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1511 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1512 | 8-729-033-14 | TRANSISTOR FP107-TL | |
| Q1513 | 8-729-425-64 | TRANSISTOR 2SD2216Q | (TR2300E/TR3300E) |
| Q1514 | 8-729-429-18 | TRANSISTOR UN9213 | (TR2300E/TR3300E) |
| Q1515 | 8-729-015-60 | TRANSISTOR 2SJ316-TD | (TR2300E/TR3300E) |
| Q1516 | 8-729-428-88 | TRANSISTOR UN9113 | (TR2300E/TR3300E) |
| Q1517 | 8-729-015-60 | TRANSISTOR 2SJ316-TD | (TR2300E/TR3300E) |
| Q1518 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1519 | 8-729-030-75 | TRANSISTOR 2SK2316-TD | |
| Q1520 | 8-729-428-88 | TRANSISTOR UN9113 | (TR2300E/TR3300E) |
| Q1521 | 8-729-429-18 | TRANSISTOR UN9213 | |

< RESISTOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R1501 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1503 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1504 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1505 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R1506 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1507 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R1508 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1509 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1512 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1513 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1514 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R1515 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1516 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1517 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R1519 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1520 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1521 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R1522 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1523 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1524 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1525 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1526 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1527 | 1-218-891-11 | METAL CHIP 68K 0.50% 1/16W | |
| R1528 | 1-218-879-11 | METAL CHIP 22K 0.50% 1/16W | |
| R1529 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1530 | 1-218-877-11 | METAL CHIP 18K 0.50% 1/16W | |
| R1531 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR2300E/TR3300E) |
| R1532 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | (TR2300E/TR3300E) |
| R1533 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR2300E/TR3300E) |
| R1534 | 1-216-855-11 | METAL CHIP 680K 5% 1/16W | (TR2300E/TR3300E) |
| R1535 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | (TR2300E/TR3300E) |
| R1536 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1537 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R1538 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1543 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1544 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | (TR2300E/TR3300E) |

< TRANSFORMER >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| T1501 | 1-426-938-11 | TRANSFORMER, DC/DC CONVERTER | |

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* A-7072-559-A EZ-21 (HP) BOARD, COMPLETE (TR2200E/TR3300E)

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(Ref. No. 6,000 Series)

< CAPACITOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C201 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |

< CONNECTOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| CN201 | 1-537-439-11 | TARMINAL BOARD, CONNECTOR | |
| CN202 | 1-569-775-21 | PIN, CONNECTOR 5P | |
| CN203 | 1-580-057-11 | PIN, CONNECTOR 4P | |
| CN204 | 1-774-641-21 | CONNECTOR, FFC/FPC 18P | |

< DIODE >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| D201 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D202 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D203 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D204 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D205 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D206 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D207 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D209 | 8-719-404-49 | DIODE MA111 | |
| D210 | 8-719-404-49 | DIODE MA111 | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| D211 | 8-719-404-49 | DIODE MA111 | |
| D212 | 8-719-421-27 | DIODE MA728 | |
| D213 | 8-719-421-27 | DIODE MA728 | |
| D216 | 8-719-404-49 | DIODE MA111 | |
| D217 | 8-719-404-49 | DIODE MA111 | |
| D220 | 8-719-404-49 | DIODE MA111 | |
| | | < IC > | |
| IC201 | 8-759-510-73 | IC BA10393F-E2 | |
| | | < TRANSISTOR > | |
| Q201 | 8-729-024-24 | TRANSISTOR 2SK2154-TL | |
| Q202 | 8-729-024-24 | TRANSISTOR 2SK2154-TL | |
| Q203 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q204 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q205 | 8-729-037-71 | TRANSISTOR UN9210J-(TX).SO | |
| Q206 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q207 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q208 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q211 | 8-729-428-88 | TRANSISTOR UN9113 | |
| Q215 | 8-729-428-88 | TRANSISTOR UN9113 | |
| Q216 | 8-729-428-88 | TRANSISTOR UN9113 | |
| Q217 | 8-729-037-63 | TRANSISTOR UN9115J-(TX).SO | |
| Q218 | 8-729-037-71 | TRANSISTOR UN9210J-(TX).SO | |
| Q219 | 8-729-037-71 | TRANSISTOR UN9210J-(TX).SO | |
| | | < RESISTOR > | |
| R201 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R202 | 1-216-813-11 | METAL CHIP 220 5% 1/16W | |
| R203 | 1-216-813-11 | METAL CHIP 220 5% 1/16W | |
| R205 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R207 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R208 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R209 | 1-216-844-11 | METAL CHIP 82K 5% 1/16W | |
| R210 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R211 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | |
| R212 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | |
| R213 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R214 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R215 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |
| R216 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R217 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R218 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R219 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R220 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R221 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R224 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R226 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R227 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-699-A | FK-67 (XCR) BOARD, COMPLETE (TR3300E:AUS,E)<br>*************************** | |
| * | A-7072-739-A | FK-67 (XP) BOARD, COMPLETE (TR2200E/TR3300E:AEP,UK)<br>************************** | |
| * | A-7072-758-A | FK-67 (XCPE) BOARD, COMPLETE (TR2300E)<br>*****************************<br>(Ref. No. 3,000 Series) | |
| | | < CONNECTOR > | |
| CN151 | 1-573-917-11 | CONNECTOR, FFC/FPC (ZIF) 8P | |
| | | < DIODE > | |
| D151 | 8-719-057-99 | DIODE SML-211YT-T86 (STOP) | |
| D152 | 8-719-057-99 | DIODE SML-211YT-T86 (REW) | |
| D153 | 8-719-057-99 | DIODE SML-211YT-T86 (PLAY) | |
| D154 | 8-719-057-99 | DIODE SML-211YT-T86 (FF) | |
| D155 | 8-719-057-99 | DIODE SML-211YT-T86 (PAUSE) | |
| D156 | 8-719-057-99 | DIODE SML-211YT-T86 (REC) (TR2300E/TR3300E:AUS,E) | |
| D157 | 8-719-057-99 | DIODE SML-211YT-T86 (REC) (TR2300E/TR3300E:AUS,E) | |
| D158 | 8-719-057-99 | DIODE SML-211YT-T86 (CHARGE) (TR2200E/TR3300E) | |
| | | < RESISTOR > | |
| R151 | 1-216-824-11 | METAL CHIP 1.8K 5% 1/16W | |
| R152 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R153 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R154 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R155 | 1-216-838-11 | METAL CHIP 27K 5% 1/16W | |
| R156 | 1-216-824-11 | METAL CHIP 1.8K 5% 1/16W | |
| R157 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R159 | 1-216-812-11 | METAL CHIP 180 5% 1/16W | |
| R160 | 1-216-812-11 | METAL CHIP 180 5% 1/16W (TR2300E/TR3300E:AUS,E) | |
| R161 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R162 | 1-216-812-11 | METAL CHIP 180 5% 1/16W | |
| R163 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R164 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| | | < VARIABLE RESISTOR > | |
| RV151 | 1-225-224-11 | RES, VAR (ZOOM) 10K | |
| | | < SWITCH > | |
| S151 | 1-692-112-11 | SWITCH, TACTIL (STOP ■) | |
| S152 | 1-692-112-11 | SWITCH, TACTIL (REW ◀◀) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| S153 | 1-692-112-11 | SWITCH, TACTIL (PLAY ▷) | |
| S154 | 1-692-112-11 | SWITCH, TACTIL (FF ▶▶) | |
| S155 | 1-692-112-11 | SWITCH, TACTIL (PAUSE ▮▮) | |
| S156 | 1-692-112-11 | SWITCH, TACTIL (REC ●) | (TR2300E/TR3300E:AUS,E) |
| S157 | 1-692-112-11 | SWITCH, TACTIL (REC □) | (TR2300E/TR3300E:AUS,E) |
| S158 | 1-692-112-11 | SWITCH, TACTIL (EDIT SEARCH +) | |
| S159 | 1-692-112-11 | SWITCH, TACTIL (EDIT SEARCH -) | |

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FP-249 BOARD, COMPLETE (not supplied)
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(Ref. No. 8,000 Series)

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | 1-658-214-11 | FP-356 FLEXIBLE BOARD | |
| | 3-965-551-01 | HOLDER (S), SENSOR | |
| | 3-965-552-01 | HOLDER (T), SENSOR | |
| | | < HALL ELEMENT > | |
| H001 | 8-719-033-37 | ELEMENT, HALL HW-105C | |
| H002 | 8-719-033-37 | ELEMENT, HALL HW-105C | |
| | | < TRANSISTOR > | |
| Q001 | 8-729-907-25 | TRANSISTOR PT4850F | |
| Q002 | 8-729-907-25 | TRANSISTOR PT4850F | |
| | | < SWITCH > | |
| S001 | 1-692-614-11 | SWITCH, PUSH (3 KEY) | (Hi8 MP, ME/MP, REC PROOF) |
| S002 | 1-572-688-11 | SWITCH, PUSH (1 KEY)(C.C. LOCK) | |

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1-658-213-11 FP-355 FLEXIBLE BOARD
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(Ref. No. 8,000 Series)

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < DIODE > | |
| D001 | 8-719-988-42 | DIODE GL453S | |

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* A-7092-917-A HI-40 (XP) BOARD, COMPLETE (TR2200E)
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* A-7092-933-A HI-40 (XCPE) BOARD, COMPLETE (TR2300E/TR3300E)
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(Ref. No. 20,000 Series)

| Ref. No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| | | < BUZZER > | | | |
| BZ501 | 1-529-104-11 | BUZZER, PIEZOELECTRIC | | | |
| | | < CAPACITOR > | | | |
| C501 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1951 | 1-135-091-00 | TANTALUM CHIP | 1uF | 20% | 16V |
| C1952 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1955 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1956 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C1957 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V |
| C1958 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1959 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V |
| C1961 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1976 | 1-162-917-11 | CERAMIC CHIP | 15PF | 5% | 50V |
| C1977 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1978 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1980 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1981 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1982 | 1-162-919-11 | CERAMIC CHIP | 22PF | 5% | 50V |
| C1984 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1986 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1987 | 1-104-851-11 | TANTAL. CHIP | 10uF | 20% | 10V |
| C1988 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1989 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1990 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2101 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C2102 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2103 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2105 | 1-162-924-11 | CERAMIC CHIP | 56PF | 5% | 50V |
| C2106 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2107 | 1-162-923-11 | CERAMIC CHIP | 47PF | 5% | 50V |
| C2108 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C2109 | 1-162-925-11 | CERAMIC CHIP | 68PF | 5% | 50V |
| C2110 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2111 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C2112 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C2113 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C2114 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2115 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C2116 | 1-164-004-11 | CERAMIC CHIP | 0.1uF | 10% | 25V |
| C2117 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C2118 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| | | < CONNECTOR > | | | |
| CN501 | 1-774-602-41 | CONNECTOR, BOARD TO BOARD 60P | | | |
| CN502 | 1-750-344-11 | CONNECTOR, FFC/EPC (ZIF) 24P | | | |
| CN503 | 1-766-627-21 | CONNECTOR, FFC/FPC 16P | | | |
| * CN504 | 1-770-619-11 | PIN, CONNECTOR 2P | | | |
| | | < DIODE > | | | |
| D501 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | | | |
| D502 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | | | |
| D503 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | | | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| D504 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D511 | 8-719-404-49 | DIODE MA111 | |
| ⚠D512 | 8-719-420-51 | DIODE MA729 | |
| D514 | 8-719-404-49 | DIODE MA111 | |
| D515 | 8-719-404-49 | DIODE MA111 | |
| D516 | 8-719-404-49 | DIODE MA111 | |
| D1951 | 8-719-404-49 | DIODE MA111 | |
| D1952 | 8-719-404-49 | DIODE MA111 | |
| D1953 | 8-719-404-49 | DIODE MA111 | |
| D1954 | 8-719-420-51 | DIODE MA729 | |
| D1955 | 8-719-420-51 | DIODE MA729 | |
| D1956 | 8-719-421-27 | DIODE MA728 | |
| D1957 | 8-719-404-49 | DIODE MA111 | |

< FERRITE BEAD >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| FB501 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | |
| FB502 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | |
| FB503 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | |

< IC >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| IC128 | 8-759-421-52 | IC MB87B110CPFV-G-BND-ER | |
| IC1951 | 8-759-298-10 | IC S-8423NFS-T2 | |
| IC1952 | 8-759-399-20 | IC S579109PZ-TEB | |
| IC1954 | 8-759-355-95 | IC S-29L253AFS-TB | |
| IC1955 | 8-759-059-05 | IC TL1596CPW-ELM1000 | |

< COIL >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| L1951 | 1-414-078-11 | INDUCTOR 10uH | |
| L2101 | 1-414-078-11 | INDUCTOR 10uH | |
| L2102 | 1-412-950-11 | INDUCTOR 8.2uH | |
| L2103 | 1-414-078-11 | INDUCTOR 10uH | |
| L2104 | 1-414-078-11 | INDUCTOR 10uH | |
| L2105 | 1-410-658-31 | INDUCTOR CHIP 220uH | |

< TRANSISTOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| Q501 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q502 | 8-729-428-88 | TRANSISTOR UN9113 | |
| Q503 | 8-729-807-86 | TRANSISTOR 2SB1295-UL5 | |
| Q504 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q505 | 8-729-807-86 | TRANSISTOR 2SB1295-UL5 | |
| Q506 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q507 | 8-729-429-18 | TRANSISTOR UN9213 | (TR2200E) |
| Q508 | 8-729-037-71 | TRANSISTOR UN9210J-(TX).SO | |
| Q509 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1951 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1952 | 8-729-015-66 | TRANSISTOR 2SC4919-TL | |
| Q1953 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1954 | 8-729-032-00 | TRANSISTOR 2SJ381-TD | |
| Q1955 | 8-729-429-14 | TRANSISTOR UN9211 | |
| Q1959 | 8-729-032-62 | TRANSISTOR 2SJ347-TE85L | |
| Q1963 | 8-729-024-48 | TRANSISTOR 2SK1830-TE85L | |
| Q2101 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q2102 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q2103 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q2104 | 8-729-037-59 | TRANSISTOR UN9111J-(TX).SO | |
| Q2105 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |

< RESISTOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R510 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R511 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R512 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R513 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R514 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R515 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R516 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R518 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R519 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R520 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | (TR2200E) |
| R521 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R522 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R523 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R524 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R525 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R526 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R527 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R528 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | (TR2300E/TR3300E) |
| R528 | 1-216-842-11 | METAL CHIP 56K 5% 1/16W | (TR2200E) |
| R529 | 1-216-843-11 | METAL CHIP 68K 5% 1/16W | (TR2200E) |
| R529 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR2300E/TR3300E) |
| R530 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R531 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R539 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R540 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R541 | 1-216-838-11 | METAL CHIP 27K 5% 1/16W | |
| R542 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R545 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1953 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1954 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1955 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1956 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1957 | 1-216-813-11 | METAL CHIP 220 5% 1/16W | |
| R1958 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1959 | 1-216-295-91 | CONDUCTOR, CHIP (2012) | |
| R1960 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1962 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1963 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1964 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1965 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

# HI-40

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R1966 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1967 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1969 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1970 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1972 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1973 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1974 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1975 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1976 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1977 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1978 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1979 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1980 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1981 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1982 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1983 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1984 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1985 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1986 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1987 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1988 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1991 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1992 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1993 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1994 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1995 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1996 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1997 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1998 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1999 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2000 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2001 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2003 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2004 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2005 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2006 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2007 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2008 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2011 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R2012 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2013 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2015 | 1-219-570-11 | METAL GLAZE 10M 5% 1/16W | |
| R2017 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2018 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R2019 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2020 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R2021 | 1-216-849-11 | METAL CHIP 220K 5% 1/16W | |
| R2022 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R2023 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2024 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2025 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2026 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R2027 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2028 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2029 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2030 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2031 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R2032 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R2036 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R2037 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R2038 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R2039 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2040 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2041 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R2044 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R2046 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R2047 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R2048 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R2049 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R2101 | 1-216-838-11 | METAL CHIP 27K 5% 1/16W | |
| R2102 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R2103 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R2104 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2105 | 1-216-812-11 | METAL CHIP 180 5% 1/16W | |
| R2108 | 1-216-824-11 | METAL CHIP 1.8K 5% 1/16W | |
| R2109 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2110 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R2111 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2112 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R2113 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R2116 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R2117 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R2119 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R2120 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R2121 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R2122 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R2124 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R2127 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R2128 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2130 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2131 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2132 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2133 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2134 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2151 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R2152 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R2155 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R2162 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < VIBRATOR > | |
| X1951 | 1-760-458-21 | VIBRATOR, CRYSTAL (32.768kHz) | |
| X1952 | 1-579-907-21 | VIBRATOR, CERAMIC (20MHz) | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-757-A | LB-45 (XCPE) BOARD, COMPLETE (TR2300E/TR3300E)<br>****************************<br>(Ref. No. 5,000 Series) | |
| | | < FLUORECENT INDICATOR > | |
| ⚠BL802 | 1-519-746-91 | TUBE, FLUORESCENT (0.7 INCH) | |
| | | < CAPACITOR > | |
| C801 | 1-104-917-11 | TANTAL. CHIP 15uF 20% 20V | |
| C802 | 1-165-178-11 | CERAMIC CHIP 6.8uF 16V | |
| C803 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C804 | 1-163-020-00 | CERAMIC CHIP 0.0082uF 10% 50V | |
| C805 | 1-163-020-00 | CERAMIC CHIP 0.0082uF 10% 50V | |
| C806 | 1-163-020-00 | CERAMIC CHIP 0.0082uF 10% 50V | |
| | | < CONNECTOR > | |
| * CN801 | 1-573-333-21 | CONNECTOR, BOARD TO BOARD 10P | |
| | | < DIODE > | |
| D801 | 8-719-049-57 | DIODE CL-170B-X-T | |
| | | < COIL > | |
| L801 | 1-412-030-11 | INDUCTOR CHIP 22uH | |
| L802 | 1-412-029-11 | INDUCTOR CHIP 10uH | |
| | | < TRANSISTOR > | |
| Q801 | 8-729-039-24 | TRANSISTOR FX216-TL1 | |
| | | < RESISTOR > | |
| R802 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| | | < TRANSFORMER > | |
| ⚠T801 | 1-429-756-21 | TRANSFORMER, INVERTER | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-698-A | LC-53 (XCR) BOARD, COMPLETE<br>***************************<br>(Ref. No. 7,000 Series) | |
| | | < CAPACITOR > | |
| C751 | 1-163-989-11 | CERAMIC CHIP 0.033uF 10% 25V | |
| | | < CONNECTOR > | |
| CN751 | 1-750-350-21 | CONNECTOR, FFC/FPC (ZIF) 10P | |
| CN752 | 1-766-644-21 | CONNECTOR, FFC/FPC 8P | |
| CN753 | 1-766-336-21 | CONNECTOR, FFC/FPC 6P | |
| | | < DIODE > | |
| D751 | 8-719-421-27 | DIODE MA728 | |
| | | < RESISTOR > | |
| R752 | 1-216-811-11 | METAL CHIP 150 5% 1/16W | |
| R753 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R754 | 1-216-840-11 | METAL CHIP 39K 5% 1/16W | |
| R755 | 1-216-811-11 | METAL CHIP 150 5% 1/16W | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-690-A | LI-57 (XCR) BOARD, COMPLETE<br>***************************<br>(Ref. No. 3,000 Series) | |
| | | < BATTERY HOLDER > | |
| BH101 | 1-550-104-32 | HOLDER, BATTERY | |
| | | < CAPACITOR > | |
| C101 | 1-115-156-11 | CERAMIC CHIP 1uF 10V | |
| C102 | 1-115-156-11 | CERAMIC CHIP 1uF 10V | |
| | | < CONNECTOR > | |
| * CN101 | 1-770-619-11 | PIN, CONNECTOR 2P | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7072-694-A | MA-269 (XCR) BOARD, COMPLETE<br>****************************<br>(Ref. No. 4,000 Series) | |
| | | < CAPACITOR > | |
| C302 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C303 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C314 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% 25V | |
| C315 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C323 | 1-162-927-11 | CERAMIC CHIP 100PF 5% 50V | |
| C326 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% 25V | |
| C329 | 1-162-927-11 | CERAMIC CHIP 100PF 5% 50V | |
| C330 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C335 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C336 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C337 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C338 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C339 | 1-110-563-11 | CERAMIC CHIP 0.068uF 10% 16V | |
| C340 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

# MA-269

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C341 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C342 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% 25V | |
| C343 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% 25V | |
| C344 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C345 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C346 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% 25V | |
| C347 | 1-164-004-11 | CERAMIC CHIP 0.1uF 10% 25V | |
| C348 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C349 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C351 | 1-110-563-11 | CERAMIC CHIP 0.068uF 10% 16V | |
| C354 | 1-164-245-11 | CERAMIC CHIP 0.015uF 10% 25V | |
| C355 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C356 | 1-164-245-11 | CERAMIC CHIP 0.015uF 10% 25V | |
| C357 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C358 | 1-162-967-11 | CERAMIC CHIP 0.0033uF 10% 50V | |
| C359 | 1-164-677-11 | CERAMIC CHIP 0.033uF 10% 16V | |
| C360 | 1-164-677-11 | CERAMIC CHIP 0.033uF 10% 16V | |
| C361 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C362 | 1-162-967-11 | CERAMIC CHIP 0.0033uF 10% 50V | |
| C363 | 1-164-677-11 | CERAMIC CHIP 0.033uF 10% 16V | |
| C364 | 1-164-677-11 | CERAMIC CHIP 0.033uF 10% 16V | |
| C365 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C366 | 1-164-245-11 | CERAMIC CHIP 0.015uF 10% 25V | |
| C367 | 1-164-245-11 | CERAMIC CHIP 0.015uF 10% 25V | |
| C368 | 1-162-962-11 | CERAMIC CHIP 470PF 10% 50V | |
| C369 | 1-162-962-11 | CERAMIC CHIP 470PF 10% 50V | |
| C370 | 1-164-346-11 | CERAMIC CHIP 1uF 16V | |
| C371 | 1-164-346-11 | CERAMIC CHIP 1uF 16V | |
| C372 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C376 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C377 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C378 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| | | < CONNECTOR > | |
| CN301 | 1-580-055-21 | PIN, CONNECTOR 2P | |
| CN302 | 1-580-055-21 | PIN, CONNECTOR 2P | |
| CN303 | 1-764-522-11 | CONNECTOR, FFC/FPC (ZIF) 13P | |
| | | < DIODE > | |
| D303 | 8-719-059-73 | DIODE CL-150HR-CD-T (REC/BATTERY) | |
| D304 | 8-719-404-49 | DIODE MA111 | |
| D305 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| | | < IC > | |
| IC301 | 8-759-248-31 | IC BA7780KV-E2 | |
| IC303 | 8-749-012-17 | IC RS-140-T | |
| | | < JACK > | |
| J301 | 1-691-737-11 | JACK (SMALL TYPE)(MIC (PLUG IN POWER)) | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < RESISTOR > | |
| R301 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R302 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R303 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R312 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R314 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R318 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R319 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R323 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R328 | 1-216-831-11 | METAL CHIP 6.8K 5% 1/16W | |
| R330 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R331 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R332 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R333 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R334 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R335 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R336 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R337 | 1-216-831-11 | METAL CHIP 6.8K 5% 1/16W | |
| R338 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R340 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R341 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R342 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R343 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R344 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R345 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R346 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R347 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R348 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R349 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R350 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R351 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R354 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R355 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R356 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R357 | 1-216-830-11 | METAL CHIP 5.6K 5% 1/16W | |
| R358 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R362 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R363 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R364 | 1-216-818-11 | METAL CHIP 560 5% 1/16W | |
| R365 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | |
| R370 | 1-216-805-11 | METAL CHIP 47 5% 1/16W | |
| R371 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R373 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |

| | Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|---|
| * | | A-7072-700-A | MM-32 (XCR) BOARD, COMPLETE (TR3300E)<br>****************************<br>(Ref. No. 9,000 Series) | | | |
| | | | < CAPACITOR > | | | |
| | C701 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| | C702 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| | C703 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V |
| | | | < CONNECTOR > | | | |
| * | CN701 | 1-766-883-31 | CONNECTOR, BOARD TO BOARD 50P | | | |
| | | | < FERRITE BEAD > | | | |
| | FB701 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | | | |
| | FB702 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | | | |
| | | | < IC > | | | |
| | IC701 | 8-759-380-21 | IC | F432153PZ-TEB | | |
| | IC702 | 8-759-428-88 | IC | ZA4038-E05 | | |
| | IC703 | 8-752-379-65 | IC | CXD2178AR-T6 | | |
| | | | < RESISTOR > | | | |
| | R703 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W |

| | Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|---|
| * | | A-7072-847-A | VC-177 (XCRPE) BOARD, COMPLETE<br>(TR3300E:AUS,E)<br>******************************* | | | |
| * | | A-7072-848-A | VC-177 (XCRP) BOARD, COMPLETE<br>(TR3300E:AEP,UK)<br>****************************** | | | |
| * | | A-7092-915-A | VC-177 (XP) BOARD, COMPLETE (TR2200E)<br>**************************** | | | |
| * | | A-7092-932-A | VC-177 (XCPE) BOARD, COMPLETE (TR2300E)<br>******************************<br>(Ref. No. 10,000 Series) | | | |
| | | | < CAPACITOR > | | | |
| | C251 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | C252 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | C253 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | C254 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V<br>(TR2200E/TR3300E:AEP,UK) |
| | C255 | 1-164-489-11 | CERAMIC CHIP | 0.22uF | 10% | 16V |
| | C256 | 1-163-989-11 | CERAMIC CHIP | 0.033uF | 10% | 25V |
| | C258 | 1-104-752-11 | TANTAL. CHIP | 33uF | 20% | 6.3V |
| | C259 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | C260 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| | C261 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C262 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C263 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V |
| C266 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C267 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C268 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C269 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C271 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C276 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C572 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V<br>(TR2200E/TR3300E) |
| C573 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V<br>(TR2200E/TR3300E) |
| C574 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C576 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C577 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C578 | 1-104-908-11 | TANTAL. CHIP | 47uF | 20% | 4V |
| C579 | 1-104-908-11 | TANTAL. CHIP | 47uF | 20% | 4V |
| C580 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V<br>(TR2200E/TR3300E:AEP,UK) |
| C581 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V<br>(TR2200E/TR3300E:AEP,UK) |
| C586 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V<br>(TR2200E/TR3300E:AEP,UK) |
| C587 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V<br>(TR2200E/TR3300E:AEP,UK) |
| C600 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V<br>(TR3300E:AUS,E) |
| C601 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V<br>(TR3300E:AUS,E) |
| C602 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V<br>(TR3300E:AUS,E) |
| C603 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V<br>(TR3300E:AUS,E) |
| C604 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V<br>(TR3300E:AUS,E) |
| C605 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V<br>(TR3300E:AUS,E) |
| C609 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C610 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1002 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C1003 | 1-164-217-11 | CERAMIC CHIP | 150PF | 5% | 50V |
| C1004 | 1-162-926-11 | CERAMIC CHIP | 82PF | 5% | 50V |
| C1005 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C1006 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1007 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1008 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1009 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1010 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1011 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1012 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1013 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1014 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |

# VC-177

| Ref.No. | Part No. | Description | | | Remark |
|---|---|---|---|---|---|
| C1018 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V |
| C1019 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V |
| C1020 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1021 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1022 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1023 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1024 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1025 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1026 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1027 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1029 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1030 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1034 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |
| C1035 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1036 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V |
| C1038 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1039 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1040 | 1-162-958-11 | CERAMIC CHIP | 270PF | 5% | 50V |
| C1042 | 1-162-921-11 | CERAMIC CHIP | 33PF | 5% | 50V |
| C1044 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C1045 | 1-162-958-11 | CERAMIC CHIP | 270PF | 5% | 50V |
| C1046 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C1047 | 1-162-922-11 | CERAMIC CHIP | 39PF | 5% | 50V |
| C1048 | 1-162-925-11 | CERAMIC CHIP | 68PF | 5% | 50V |
| C1049 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C1050 | 1-162-921-11 | CERAMIC CHIP | 33PF | 5% | 50V |
| C1051 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1052 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1053 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1054 | 1-162-925-11 | CERAMIC CHIP | 68PF | 5% | 50V |
| C1055 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1056 | 1-162-926-11 | CERAMIC CHIP | 82PF | 5% | 50V |
| C1057 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V |
| C1058 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1061 | 1-162-959-11 | CERAMIC CHIP | 330PF | 5% | 50V |
| C1062 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1063 | 1-162-921-11 | CERAMIC CHIP | 33PF | 5% | 50V |
| C1064 | 1-162-927-11 | CERAMIC CHIP | 100PF | 5% | 50V |
| C1066 | 1-162-920-11 | CERAMIC CHIP | 27PF | 5% | 50V |
| C1067 | 1-162-918-11 | CERAMIC CHIP | 18PF | 5% | 50V |
| C1068 | 1-162-907-11 | CERAMIC CHIP | 2PF | 0.25PF | 50V |
| C1069 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1070 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1071 | 1-162-928-11 | CERAMIC CHIP | 120PF | 5% | 50V |
| C1072 | 1-162-928-11 | CERAMIC CHIP | 120PF | 5% | 50V |
| C1075 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1076 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V |
| C1151 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1152 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1153 | 1-164-217-11 | CERAMIC CHIP | 150PF | 5% | 50V |
| C1154 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1156 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1157 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V |
| C1160 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V |
| C1161 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1162 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1163 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1164 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1165 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1166 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1167 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1168 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1201 | 1-162-965-11 | CERAMIC CHIP | 0.0015uF | 10% | 50V |
| C1203 | 1-135-181-21 | TANTALUM CHIP | 4.7uF | 20% | 6.3V |
| C1204 | 1-164-392-11 | CERAMIC CHIP | 390PF | 5% | 50V |
| C1205 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1206 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1207 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1208 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1209 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V |
| C1210 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V |
| C1212 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1213 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1215 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1216 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1217 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V |
| C1218 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1219 | 1-135-149-21 | TANTALUM CHIP | 2.2uF | 20% | 10V |
| C1220 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V |
| C1222 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V |
| C1223 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1224 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1227 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1228 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1229 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1230 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1231 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C1232 | 1-162-966-11 | CERAMIC CHIP | 0.0022uF | 10% | 50V |
| C1233 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V |
| C1234 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1236 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1237 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V |
| C1240 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1280 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V |
| C1282 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V<br>(TR2300E/TR3300E:AUS, E) |
| C1283 | 1-162-922-11 | CERAMIC CHIP | 39PF | 5% | 50V |
| C1284 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V |
| C1285 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1301 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V |
| C1302 | 1-104-852-11 | TANTAL. CHIP | 22uF | 20% | 6.3V |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C1306 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | (TR2300E/TR3300E:AUS,E) |
| C1307 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1308 | 1-135-180-21 | TANTALUM CHIP 3.3uF 20% 6.3V | |
| C1309 | 1-135-180-21 | TANTALUM CHIP 3.3uF 20% 6.3V | (TR2300E/TR3300E:AUS,E) |
| C1310 | 1-164-677-11 | CERAMIC CHIP 0.033uF 10% 16V | |
| C1311 | 1-164-489-11 | CERAMIC CHIP 0.22uF 10% 16V | |
| C1312 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | (TR2300E/TR3300E:AUS,E) |
| C1313 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1314 | 1-135-180-21 | TANTALUM CHIP 3.3uF 20% 6.3V | |
| C1315 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1317 | 1-135-201-11 | TANTALUM CHIP 10uF 20% 4V | |
| C1318 | 1-164-489-11 | CERAMIC CHIP 0.22uF 10% 16V | |
| C1319 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1320 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1321 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | (TR2300E/TR3300E:AUS,E) |
| C1322 | 1-110-501-11 | CERAMIC CHIP 0.33uF 10% 16V | (TR2300E/TR3300E:AUS,E) |
| C1323 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% 25V | (TR2300E/TR3300E:AUS,E) |
| C1324 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | (TR2300E/TR3300E:AUS,E) |
| C1326 | 1-162-927-11 | CERAMIC CHIP 100PF 5% 50V | (TR2300E/TR3300E:AUS,E) |
| C1327 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1328 | 1-162-919-11 | CERAMIC CHIP 22PF 5% 50V | (TR2300E/TR3300E:AUS,E) |
| C1330 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1331 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1332 | 1-126-246-11 | ELECT CHIP 220uF 20% 4V | |
| C1333 | 1-126-246-11 | ELECT CHIP 220uF 20% 4V | |
| C1334 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1335 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C1336 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1337 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C1338 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1339 | 1-135-201-11 | TANTALUM CHIP 10uF 20% 4V | |
| C1340 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1342 | 1-162-928-11 | CERAMIC CHIP 120PF 5% 50V | (TR2300E/TR3300E:AUS,E) |
| C1343 | 1-162-920-11 | CERAMIC CHIP 27PF 5% 50V | (TR2300E/TR3300E:AUS,E) |
| C1345 | 1-135-180-21 | TANTALUM CHIP 3.3uF 20% 6.3V | (TR2300E/TR3300E:AUS,E) |
| C1346 | 1-162-917-11 | CERAMIC CHIP 15PF 5% 50V | |
| C1347 | 1-162-917-11 | CERAMIC CHIP 15PF 5% 50V | |
| C1402 | 1-107-823-11 | CERAMIC CHIP 0.47uF 10% 16V | |
| C1403 | 1-104-908-11 | TANTAL. CHIP 47uF 20% 4V | |
| C1404 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C1405 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1406 | 1-107-823-11 | CERAMIC CHIP 0.47uF 10% 16V | |
| C1407 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1408 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1409 | 1-104-847-11 | TANTAL. CHIP 22uF 20% 4V | |
| C1410 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1411 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1412 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C1414 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1415 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1416 | 1-104-847-11 | TANTAL. CHIP 22uF 20% 4V | |
| C1417 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1421 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C1422 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1423 | 1-107-823-11 | CERAMIC CHIP 0.47uF 10% 16V | |
| C1424 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1425 | 1-135-149-21 | TANTALUM CHIP 2.2uF 20% 10V | |
| C1426 | 1-104-908-11 | TANTAL. CHIP 47uF 20% 4V | |
| C1427 | 1-107-823-11 | CERAMIC CHIP 0.47uF 10% 16V | |
| C1429 | 1-164-489-11 | CERAMIC CHIP 0.22uF 10% 16V | |
| C1430 | 1-164-489-11 | CERAMIC CHIP 0.22uF 10% 16V | |
| C1431 | 1-135-151-21 | TANTALUM CHIP 4.7uF 20% 4V | |
| C1432 | 1-104-908-11 | TANTAL. CHIP 47uF 20% 4V | |
| C1433 | 1-164-489-11 | CERAMIC CHIP 0.22uF 10% 16V | |
| C1434 | 1-164-489-11 | CERAMIC CHIP 0.22uF 10% 16V | |
| C1435 | 1-104-752-11 | TANTAL. CHIP 33uF 20% 6.3V | |
| C1436 | 1-110-569-11 | TANTAL. CHIP 47uF 20% 6.3V | |
| C1437 | 1-104-847-11 | TANTAL. CHIP 22uF 20% 4V | |
| C1439 | 1-104-852-11 | TANTAL. CHIP 22uF 20% 6.3V | |
| C1441 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1444 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1471 | 1-162-968-11 | CERAMIC CHIP 0.0047uF 10% 50V | |
| C1474 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C1475 | 1-162-968-11 | CERAMIC CHIP 0.0047uF 10% 50V | |
| C1601 | 1-164-232-11 | CERAMIC CHIP 0.01uF 50V | |
| C1602 | 1-115-156-11 | CERAMIC CHIP 1uF 10V | |
| C1604 | 1-135-214-21 | TANTAL. CHIP 4.7uF 20% 20V | |
| C1605 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1608 | 1-135-201-11 | TANTALUM CHIP 10uF 20% 4V | |
| C1612 | 1-162-923-11 | CERAMIC CHIP 47PF 5% 50V | |
| C1613 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1615 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1616 | 1-162-916-11 | CERAMIC CHIP 12PF 5% 50V | |
| C1617 | 1-135-145-11 | TANTALUM CHIP 0.47uF 10% 35V | |
| C1618 | 1-164-492-11 | CERAMIC CHIP 0.15uF 10% 16V | |
| C1619 | 1-135-145-11 | TANTALUM CHIP 0.47uF 10% 35V | |
| C1620 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V | |
| C1621 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1622 | 1-162-964-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| C1623 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V | |

# VC-177

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| C1624 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1625 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C1626 | 1-164-346-11 | CERAMIC CHIP | 1uF | | 16V | |
| C1628 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1629 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V | |
| C1630 | 1-162-919-11 | CERAMIC CHIP | 22PF | 5% | 50V | |
| C1631 | 1-162-919-11 | CERAMIC CHIP | 22PF | 5% | 50V | |
| C1632 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1635 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C1654 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V | |
| C1655 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V | |
| C1656 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V | |
| C1657 | 1-135-181-21 | TANTALUM CHIP | 4.7uF | 20% | 6.3V | |
| C1658 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1659 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1665 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V | |
| C1702 | 1-115-156-11 | CERAMIC CHIP | 1uF | | 10V | |
| C1703 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | (TR2200E/TR2300E) |
| C1751 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V | |
| C1752 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1753 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1754 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1755 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V | |
| C1756 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V | |
| C1757 | 1-162-969-11 | CERAMIC CHIP | 0.0068uF | 10% | 25V | |
| C1758 | 1-162-969-11 | CERAMIC CHIP | 0.0068uF | 10% | 25V | |
| C1760 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1761 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V | |
| C1762 | 1-162-915-11 | CERAMIC CHIP | 10PF | 0.5PF | 50V | |
| C1763 | 1-162-911-11 | CERAMIC CHIP | 6PF | 0.5PF | 50V | |
| C1764 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V | |
| C1765 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V | |
| C1767 | 1-164-217-11 | CERAMIC CHIP | 150PF | 5% | 50V | |
| C1768 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1769 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1770 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C1771 | 1-162-957-11 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C1772 | 1-162-957-11 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C1773 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1774 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1775 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1776 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1777 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1779 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1780 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | |
| C1781 | 1-164-217-11 | CERAMIC CHIP | 150PF | 5% | 50V | |
| C1782 | 1-162-923-11 | CERAMIC CHIP | 47PF | 5% | 50V | |
| C1851 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1852 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1853 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1854 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1855 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1856 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1857 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1858 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1859 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1860 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1861 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |
| C1862 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C1863 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C1864 | 1-107-682-11 | CERAMIC CHIP | 1uF | 10% | 16V | |
| C1865 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1866 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C1867 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1868 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1869 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C1870 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C1871 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | |
| C1872 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | |
| C1873 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C1874 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C1875 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C1876 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C1877 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1878 | 1-162-968-11 | CERAMIC CHIP | 0.0047uF | 10% | 50V | |
| C1879 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1880 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1882 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1884 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C1886 | 1-107-826-11 | CERAMIC CHIP | 0.1uF | 10% | 16V | |
| C1887 | 1-162-957-11 | CERAMIC CHIP | 220PF | 5% | 50V | |
| C1888 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C2051 | 1-135-151-21 | TANTALUM CHIP | 4.7uF | 20% | 4V | (TR2300E/TR3300E) |
| C2052 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | (TR2300E/TR3300E) |
| C2054 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | (TR2300E/TR3300E) |
| C2055 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | (TR2300E/TR3300E) |
| C2056 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | (TR2300E/TR3300E) |
| C2057 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | (TR2300E/TR3300E) |

< CONNECTOR >

| Ref. No. | Part No. | Description |
|---|---|---|
| CN101 | 1-766-341-21 | CONNECTOR, FFC/FPC 11P |
| CN102 | 1-766-345-21 | CONNECTOR, FFC/FPC 15P |
| CN103 | 1-766-342-21 | CONNECTOR, FFC/FPC 12P |
| CN104 | 1-766-340-21 | CONNECTOR, FFC/FPC 10P |
| CN105 | 1-766-644-21 | CONNECTOR, FFC/FPC 8P |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| CN106 | 1-691-542-21 | CONNECTOR, BOARD TO BOARD 48P | |
| CN107 | 1-766-344-21 | CONNECTOR, FFC/FPC 14P | |
| CN108 | 1-766-353-21 | CONNECTOR, FFC/FPC 23P | |
| CN109 | 1-691-352-21 | CONNECTOR, FFC/FPC (ZIF) 14P | |
| CN110 | 1-774-596-41 | CONNECTOR, BOARD TO BOARD 60P | |
| CN111 | 1-766-350-21 | CONNECTOR, FFC/FPC 20P | |
| CN112 | 1-750-630-11 | CONNECTOR, FFC/FPC (ZIF) 16P | |
| CN113 | 1-573-363-21 | CONNECTOR, FFC/FPC 23P | |
| CN202 | 1-766-343-21 | CONNECTOR, FFC/FPC 13P | |
| CN203 | 1-774-641-21 | CONNECTOR, FFC/FPC 18P | (TR2200E/TR3300E) |
| CN204 | 1-766-884-41 | CONNECTOR, BOARD TO BOARD 50P | (TR3300E) |
| CN205 | 1-766-340-21 | CONNECTOR, FFC/FPC 10P | |

< DIODE >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| D384 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D385 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D394 | 8-719-045-87 | DIODE MA4Z082WA-(TXD).SO | |
| D651 | 8-719-404-49 | DIODE MA111 | (TR2200E) |
| D652 | 8-719-404-49 | DIODE MA111 | (TR2200E) |
| D653 | 8-719-404-49 | DIODE MA111 | (TR2200E) |
| D1201 | 8-719-055-86 | DIODE KV1470TL1-3 | |
| D1202 | 8-719-055-86 | DIODE KV1470TL1-3 | |
| D1601 | 8-719-404-49 | DIODE MA111 | |
| D1602 | 8-713-102-28 | DIODE 1T379-04-T8A | |
| D1758 | 8-719-420-51 | DIODE MA729 | |

< FERRITE BEAD >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| FB1151 | 1-500-284-21 | INDUCTOR, FERRITE BEAD | |
| FB1601 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | |
| FB1602 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | |
| FB1603 | 1-500-284-21 | INDUCTOR, FERRITE BEAD | |
| FB1604 | 1-500-284-21 | INDUCTOR, FERRITE BEAD | |
| FB1605 | 1-500-284-21 | INDUCTOR, FERRITE BEAD | |
| FB1701 | 1-414-228-11 | INDUCTOR, FERRITE BEAD | |

< IC >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| IC101 | 8-752-075-31 | IC CXA2012R-T4 | |
| IC102 | 8-759-357-62 | IC MB87B108DPFV-G-BND-ER | |
| IC103 | 8-752-356-45 | IC CXD2301Q-T4 | |
| IC104 | 8-759-357-65 | IC uPD6466GS-604-GLG-E2 | |
| IC105 | 8-759-357-64 | IC CF45819BPZ-TEB | |
| IC106 | 8-759-387-35 | IC HG51CS276TETL | |
| IC108 | 8-759-290-12 | IC M62370GP-650D | |
| IC109 | 8-759-368-08 | IC AN2980FH-EB | |
| IC114 | 8-752-380-17 | IC CXD2177BR-T6 | |
| IC115 | 8-752-379-65 | IC CXD2178AR-T6 | (TR2200E/TR2300E) |
| IC116 | 8-759-365-53 | IC S-29L353AFS-TB | |
| IC117 | 8-752-872-77 | IC CXP912032-010R-T6 | |
| IC118 | 8-759-058-62 | IC TC7S08FU(TE85R) | |
| IC119 | 8-759-058-62 | IC TC7S08FU(TE85R) | |
| IC120 | 8-759-356-30 | IC XR1083ACQ-E2 | |
| IC121 | 8-759-327-67 | IC LB1950V-TLM | |
| IC122 | 8-759-327-62 | IC TA8482FN-EL | |
| IC129 | 8-759-357-63 | IC AN2220FH-EB | |
| IC130 | 8-759-058-58 | IC TC7S04FU(TE85R) | (TR2300E/TR3300E:AUS,E) |
| IC151 | 8-752-376-32 | IC CXD2310AR-T4 | |
| IC152 | 8-752-377-12 | IC CXD2175R-T6 | |
| IC202 | 8-752-377-92 | IC CXD2485R-T4 | |
| IC203 | 8-752-073-11 | IC CXA2006Q-T4 | |
| IC251 | 8-759-337-40 | IC NJM2904V(TE2) | |
| IC252 | 8-759-351-46 | IC MPC17A34RVMEL | |
| IC253 | 8-759-337-41 | IC NJM2902V(TE2) | |
| IC255 | 8-752-377-38 | IC CXD2430N-T4 | |
| IC571 | 8-759-075-68 | IC TC4066BFS-EL | (TR3300E:AUS,E) |
| IC600 | 8-759-284-49 | IC NJM2285V-TE2 | (TR3300E:AUS,E) |
| IC800 | 8-752-378-02 | IC CXD2049R-T4 | (TR2300E/TR3300E) |

< COIL >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| L251 | 1-414-078-11 | INDUCTOR 10uH | |
| L252 | 1-414-078-11 | INDUCTOR 10uH | |
| L253 | 1-412-058-11 | INDUCTOR CHIP 10uH | |
| L1001 | 1-412-952-11 | INDUCTOR 12uH | |
| L1002 | 1-412-066-21 | INDUCTOR CHIP 220uH | |
| L1003 | 1-412-066-21 | INDUCTOR CHIP 220uH | |
| L1004 | 1-412-066-21 | INDUCTOR CHIP 220uH | |
| L1005 | 1-414-080-11 | INDUCTOR 22uH | |
| L1006 | 1-412-957-11 | INDUCTOR 33uH | |
| L1007 | 1-412-280-31 | INDUCTOR 330uH | |
| L1008 | 1-412-282-41 | INDUCTOR 470uH | |
| L1009 | 1-410-657-21 | INDUCTOR CHIP 180uH | |
| L1010 | 1-412-956-21 | INDUCTOR 27uH | |
| L1011 | 1-412-949-21 | INDUCTOR 6.8uH | |
| L1012 | 1-412-951-11 | INDUCTOR 10uH | |
| L1013 | 1-414-078-11 | INDUCTOR 10uH | |
| L1014 | 1-410-656-11 | INDUCTOR CHIP 150uH | |
| L1015 | 1-412-963-11 | INDUCTOR 100uH | |
| L1018 | 1-410-656-11 | INDUCTOR CHIP 150uH | |
| L1019 | 1-412-280-31 | INDUCTOR 330uH | |
| L1021 | 1-412-944-11 | INDUCTOR 2.7uH | |
| L1022 | 1-412-279-31 | INDUCTOR 270uH | |
| L1151 | 1-414-078-11 | INDUCTOR 10uH | |
| L1154 | 1-414-078-11 | INDUCTOR 10uH | |
| L1201 | 1-414-078-11 | INDUCTOR 10uH | |
| L1202 | 1-414-078-11 | INDUCTOR 10uH | |
| L1203 | 1-414-078-11 | INDUCTOR 10uH | |
| L1204 | 1-412-945-11 | INDUCTOR 3.3uH | |
| L1206 | 1-414-078-11 | INDUCTOR 10uH | |
| L1207 | 1-414-078-11 | INDUCTOR 10uH | |
| L1209 | 1-414-078-11 | INDUCTOR 10uH | |

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| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| L1220 | 1-412-955-11 | INDUCTOR 22uH | |
| L1301 | 1-414-078-11 | INDUCTOR 10uH | |
| L1303 | 1-412-937-11 | INDUCTOR 0.68uH | (TR2300E/TR3300E:AUS,E) |
| L1305 | 1-414-078-11 | INDUCTOR 10uH | |
| L1306 | 1-414-078-11 | INDUCTOR 10uH | |
| L1307 | 1-414-078-11 | INDUCTOR 10uH | |
| L1308 | 1-412-959-11 | INDUCTOR 47uH | (TR2300E/TR3300E:AUS,E) |
| L1309 | 1-412-955-11 | INDUCTOR 22uH | |
| L1402 | 1-414-078-11 | INDUCTOR 10uH | |
| L1403 | 1-414-233-21 | INDUCTOR, FERRITE BEAD | |
| L1603 | 1-412-058-11 | INDUCTOR CHIP 10uH | |
| L1652 | 1-414-078-11 | INDUCTOR 10uH | |
| L1654 | 1-414-078-11 | INDUCTOR 10uH | |
| L1751 | 1-414-078-11 | INDUCTOR 10uH | |
| L1752 | 1-414-078-11 | INDUCTOR 10uH | |
| L1753 | 1-414-078-11 | INDUCTOR 10uH | |
| L1754 | 1-412-961-11 | INDUCTOR 68uH | |
| L2051 | 1-414-078-11 | INDUCTOR 10uH | (TR2300E/TR3300E) |
| | | < TRANSISTOR > | |
| Q251 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q252 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q253 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q254 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q572 | 8-729-037-63 | TRANSISTOR UN9115J-(TX).SO | |
| Q573 | 8-729-429-18 | TRANSISTOR UN9213 | (TR2200E/TR3300E) |
| Q574 | 8-729-037-76 | TRANSISTOR UN9215J-(TX).SO | (TR2200E/TR3300E) |
| Q575 | 8-729-037-77 | TRANSISTOR UN9216J-(TX).SO | (TR2200E/TR3300E) |
| Q576 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | (TR3300E:AUS,E) |
| Q577 | 8-729-429-18 | TRANSISTOR UN9213 | (TR3300E:AUS,E) |
| Q578 | 8-729-037-76 | TRANSISTOR UN9215J-(TX).SO | |
| Q579 | 8-729-037-77 | TRANSISTOR UN9216J-(TX).SO | |
| Q580 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q581 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | (TR2200E/TR3300E) |
| Q582 | 8-729-037-76 | TRANSISTOR UN9215J-(TX).SO | (TR2200E/TR3300E) |
| Q583 | 8-729-037-77 | TRANSISTOR UN9216J-(TX).SO | (TR2200E/TR3300E) |
| Q584 | 8-729-429-18 | TRANSISTOR UN9213 | (TR3300E:AUS,E) |
| Q585 | 8-729-037-76 | TRANSISTOR UN9215J-(TX).SO | |
| Q586 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | |
| Q587 | 8-729-037-77 | TRANSISTOR UN9216J-(TX).SO | |
| Q588 | 8-729-037-77 | TRANSISTOR UN9216J-(TX).SO | |
| Q589 | 8-729-037-77 | TRANSISTOR UN9216J-(TX).SO | |
| Q590 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | |
| Q591 | 8-729-015-66 | TRANSISTOR 2SC4919-TL | |
| Q592 | 8-729-015-66 | TRANSISTOR 2SC4919-TL | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| Q593 | 8-729-015-66 | TRANSISTOR 2SC4919-TL | |
| Q1001 | 8-729-031-69 | TRANSISTOR 2SA1965-TL | |
| Q1002 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1003 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1004 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1005 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1006 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1007 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1009 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1010 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1013 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1014 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1015 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1016 | 8-729-037-89 | TRANSISTOR 2SC4627J-C(TX).SO | |
| Q1018 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1019 | 8-729-037-89 | TRANSISTOR 2SC4627J-C(TX).SO | |
| Q1021 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1022 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1023 | 8-729-807-86 | TRANSISTOR 2SB1295-UL5 | |
| Q1024 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1027 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1030 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1031 | 8-729-037-89 | TRANSISTOR 2SC4627J-C(TX).SO | |
| Q1033 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1034 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1035 | 8-729-031-69 | TRANSISTOR 2SA1965-TL | |
| Q1036 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1037 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1151 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1201 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1202 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1203 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1220 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1221 | 8-729-429-18 | TRANSISTOR UN9213 | (TR2300E/TR3300E:AUS,E) |
| Q1222 | 8-729-037-63 | TRANSISTOR UN9115J-(TX).SO | |
| Q1305 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1306 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1601 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1602 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | |
| Q1603 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | |
| Q1604 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q1751 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q1752 | 8-729-037-61 | TRANSISTOR UN9113J-(TX).SO | (TR3300E) |
| Q1851 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1852 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q1853 | 8-729-230-63 | TRANSISTOR 2SC4116-YG | |
| Q1854 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q2051 | 8-729-425-50 | TRANSISTOR 2SB1462Q | (TR2300E/TR3300E) |
| Q2052 | 8-729-425-50 | TRANSISTOR 2SB1462Q | (TR2300E/TR3300E) |
| Q2053 | 8-729-425-50 | TRANSISTOR 2SB1462Q | (TR2300E/TR3300E) |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | | < RESISTOR > | |
| R251 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R252 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R253 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R254 | 1-216-001-00 | METAL CHIP 10 5% 1/10W | |
| R255 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R256 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R257 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R258 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R259 | 1-216-830-11 | METAL CHIP 5.6K 5% 1/16W | |
| R260 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R261 | 1-216-815-11 | METAL CHIP 330 5% 1/16W | |
| R262 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R263 | 1-216-848-11 | METAL CHIP 180K 5% 1/16W | |
| R264 | 1-216-848-11 | METAL CHIP 180K 5% 1/16W | |
| R265 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R266 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R267 | 1-216-824-11 | METAL CHIP 1.8K 5% 1/16W | |
| R268 | 1-218-893-11 | METAL CHIP 82K 0.50% 1/16W | |
| R269 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R270 | 1-216-843-11 | METAL CHIP 68K 5% 1/16W | |
| R271 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R272 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R273 | 1-216-843-11 | METAL CHIP 68K 5% 1/16W | |
| R274 | 1-216-843-11 | METAL CHIP 68K 5% 1/16W | |
| R275 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R276 | 1-218-883-11 | METAL CHIP 33K 0.50% 1/16W | |
| R293 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R294 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R295 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R296 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R297 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R299 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R301 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R572 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | (TR2200E/TR3300E) |
| R573 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | (TR2200E/TR3300E) |
| R574 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | (TR2200E/TR3300E) |
| R575 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | (TR2200E/TR3300E) |
| R576 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR2200E/TR3300E) |
| R577 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | (TR3300E:AUS, E) |
| R578 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR3300E:AUS, E) |
| R579 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R580 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R581 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R582 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R583 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R584 | 1-216-810-11 | METAL CHIP 120 5% 1/16W | |
| R585 | 1-216-810-11 | METAL CHIP 120 5% 1/16W | |
| R600 | 1-216-804-11 | METAL CHIP 39 5% 1/16W | |
| R601 | 1-216-804-11 | METAL CHIP 39 5% 1/16W | |
| R602 | 1-216-804-11 | METAL CHIP 39 5% 1/16W | |
| R603 | 1-216-803-11 | METAL CHIP 33 5% 1/16W | |
| R604 | 1-216-803-11 | METAL CHIP 33 5% 1/16W | |
| R605 | 1-216-803-11 | METAL CHIP 33 5% 1/16W | |
| R606 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | (TR2200E/TR3300E) |
| R607 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | (TR2200E/TR3300E) |
| R608 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | (TR2200E/TR3300E) |
| R609 | 1-216-295-91 | CONDUCTOR, CHIP (2012) | (TR2300E/TR3300E:AUS, E) |
| R609 | 1-412-963-11 | INDUCTOR 100UH | (TR2200E/TR3300E:AEP, UK) |
| R610 | 1-216-295-91 | CONDUCTOR, CHIP (2012) | (TR2300E/TR3300E:AUS, E) |
| R610 | 1-412-963-11 | INDUCTOR 100UH | (TR2200E/TR3300E:AEP, UK) |
| R611 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R613 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E) |
| R614 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E) |
| R615 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E/TR2300E/TR3300E:AEP, UK) |
| R616 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E/TR2300E/TR3300E:AEP, UK) |
| R617 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E/TR2300E/TR3300E:AEP, UK) |
| R619 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R620 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R621 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R622 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R651 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | (TR2200E) |
| R653 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E) |
| R654 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E) |
| R655 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E/TR3300E) |
| R656 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E/TR3300E) |
| R668 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E) |
| R669 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E) |
| R702 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R703 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R705 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | (TR3300E:AEP, UK) |
| R705 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | (TR2300E) |
| R705 | 1-216-842-11 | METAL CHIP 56K 5% 1/16W | (TR2200E) |
| R705 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR3300E:AUS, E) |

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| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R706 | 1-216-843-11 | METAL CHIP 68K 5% 1/16W | (TR2200E) |
| R706 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | (TR2300E/TR3300E:AEP, UK) |
| R1001 | 1-216-806-11 | METAL GLAZE 56 5% 1/16W | |
| R1002 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |
| R1003 | 1-216-818-11 | METAL CHIP 560 5% 1/16W | |
| R1004 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1005 | 1-216-814-11 | METAL CHIP 270 5% 1/16W | |
| R1006 | 1-216-813-11 | METAL CHIP 220 5% 1/16W | |
| R1007 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1008 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1009 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R1010 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1011 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1012 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1013 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1014 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1016 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1017 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1018 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1020 | 1-216-831-11 | METAL CHIP 6.8K 5% 1/16W | |
| R1021 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1022 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R1023 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1024 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1025 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1026 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1027 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |
| R1029 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1030 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1031 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1032 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1033 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1034 | 1-218-871-11 | METAL CHIP 10K 0.50% 1/16W | |
| R1035 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1038 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1041 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1044 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R1049 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1053 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1054 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1055 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1056 | 1-216-823-11 | METAL CHIP 1.5K 5% 1/16W | |
| R1057 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1058 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1060 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R1061 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1062 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1063 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R1065 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1066 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1067 | 1-216-815-11 | METAL CHIP 330 5% 1/16W | |
| R1068 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1069 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R1070 | 1-216-815-11 | METAL CHIP 330 5% 1/16W | |
| R1072 | 1-216-828-11 | METAL CHIP 3.9K 5% 1/16W | |
| R1073 | 1-216-813-11 | METAL CHIP 220 5% 1/16W | |
| R1074 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1075 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1076 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1079 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1080 | 1-216-818-11 | METAL CHIP 560 5% 1/16W | |
| R1081 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1085 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1086 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1088 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R1090 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R1091 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1093 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R1094 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1095 | 1-216-815-11 | METAL CHIP 330 5% 1/16W | |
| R1096 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1097 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1098 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1099 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R1100 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |
| R1104 | 1-216-295-91 | CONDUCTOR, CHIP (2012) | |
| R1105 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1106 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1108 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1109 | 1-216-828-11 | METAL CHIP 3.9K 5% 1/16W | |
| R1110 | 1-216-805-11 | METAL CHIP 47 5% 1/16W | |
| R1111 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1112 | 1-216-818-11 | METAL CHIP 560 5% 1/16W | |
| R1113 | 1-216-831-11 | METAL CHIP 6.8K 5% 1/16W | |
| R1114 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1151 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1152 | 1-216-822-11 | METAL CHIP 1.2K 5% 1/16W | |
| R1153 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R1154 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1155 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | |
| R1156 | 1-216-822-11 | METAL CHIP 1.2K 5% 1/16W | |
| R1157 | 1-216-808-11 | METAL CHIP 82 5% 1/16W | |
| R1159 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1160 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R1162 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1163 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | |
| R1165 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |
| R1213 | 1-216-830-11 | METAL CHIP 5.6K 5% 1/16W | |
| R1215 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R1216 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R1217 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | |
| R1218 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1219 | 1-216-831-11 | METAL CHIP 6.8K 5% 1/16W | |
| R1221 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R1222 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R1223 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1224 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | |
| R1225 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1226 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1227 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1228 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R1230 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1231 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R1232 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1233 | 1-216-822-11 | METAL CHIP 1.2K 5% 1/16W | |
| R1234 | 1-216-840-11 | METAL CHIP 39K 5% 1/16W | |
| R1235 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1236 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1237 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | |
| R1238 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1239 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1240 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1241 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1242 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1246 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1247 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1248 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | |
| R1249 | 1-216-827-11 | METAL CHIP 3.3K 5% 1/16W | |
| R1250 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1251 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1252 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1253 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R1254 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1255 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R1256 | 1-216-816-11 | METAL CHIP 390 5% 1/16W | |
| R1280 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1281 | 1-216-822-11 | METAL CHIP 1.2K 5% 1/16W | |
| R1283 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1283 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E/TR3300E:AEP,UK) |
| R1284 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1285 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1285 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2200E/TR3300E:AEP,UK) |
| R1286 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1290 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1292 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R1293 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R1307 | 1-216-836-11 | METAL CHIP 18K 5% 1/16W | |
| R1308 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1312 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1313 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1314 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1315 | 1-216-815-11 | METAL CHIP 330 5% 1/16W | |
| R1316 | 1-216-815-11 | METAL CHIP 330 5% 1/16W | |
| R1318 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | |
| R1319 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | |
| R1321 | 1-218-876-11 | METAL CHIP 16K 0.50% 1/16W | |
| R1322 | 1-218-847-11 | METAL CHIP 1K 0.50% 1/16W | |
| R1323 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1324 | 1-216-834-11 | METAL CHIP 12K 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1330 | 1-216-822-11 | METAL CHIP 1.2K 5% 1/16W | |
| R1331 | 1-216-823-11 | METAL CHIP 1.5K 5% 1/16W | |
| R1332 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E/TR3300E:AUS,E) |
| R1333 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R1334 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R1402 | 1-216-824-11 | METAL CHIP 1.8K 5% 1/16W | |
| R1403 | 1-218-903-11 | METAL CHIP 220K 0.50% 1/16W | |
| R1404 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1406 | 1-218-901-11 | METAL CHIP 180K 0.50% 1/16W | |
| R1407 | 1-218-873-11 | METAL CHIP 12K 0.50% 1/16W | |
| R1408 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1409 | 1-216-820-11 | METAL CHIP 820 5% 1/16W | |
| R1410 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1415 | 1-162-925-11 | CERAMIC CHIP 68PF 5% 50V | |
| R1418 | 1-218-903-11 | METAL CHIP 220K 0.50% 1/16W | |
| R1419 | 1-216-813-11 | METAL CHIP 220 5% 1/16W | |
| R1421 | 1-216-823-11 | METAL CHIP 1.5K 5% 1/16W | |
| R1422 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1423 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1424 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R1425 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R1426 | 1-216-823-11 | METAL CHIP 1.5K 5% 1/16W | |
| R1429 | 1-218-909-11 | METAL CHIP 390K 0.50% 1/16W | |
| R1430 | 1-218-909-11 | METAL CHIP 390K 0.50% 1/16W | |
| R1431 | 1-216-849-11 | METAL CHIP 220K 5% 1/16W | |
| R1460 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1463 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R1472 | 1-218-855-11 | METAL CHIP 2.2K 0.50% 1/16W | |
| R1476 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R1601 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1603 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R1616 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R1620 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R1621 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/16W | |
| R1622 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/16W | |
| R1626 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W | |
| R1628 | 1-216-806-11 | METAL GLAZE | 56 | 5% | 1/16W | (TR3300E) |
| R1628 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W | (TR2200E/TR2300E) |
| R1629 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W | |
| R1630 | 1-216-809-11 | METAL CHIP | 100 | 5% | 1/16W | |
| R1632 | 1-216-857-11 | METAL CHIP | 1M | 5% | 1/16W | |
| R1633 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1651 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W | |
| R1653 | 1-216-803-11 | METAL CHIP | 33 | 5% | 1/16W | |
| R1751 | 1-216-842-11 | METAL CHIP | 56K | 5% | 1/16W | |
| R1752 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W | |
| R1753 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1759 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1760 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1761 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1762 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1763 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1772 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1773 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1775 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1780 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1781 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1782 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1783 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1784 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1785 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1786 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W | |
| R1787 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1789 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1790 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1791 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1792 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1793 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1794 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1795 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1796 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1798 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1801 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1803 | 1-216-832-11 | METAL CHIP | 8.2K | 5% | 1/16W | |
| R1804 | 1-216-857-11 | METAL CHIP | 1M | 5% | 1/16W | |
| R1805 | 1-216-856-11 | METAL CHIP | 820K | 5% | 1/16W | |
| R1806 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1807 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1808 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1809 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1810 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W | |
| R1811 | 1-216-825-11 | METAL CHIP | 2.2K | 5% | 1/16W | |
| R1812 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W | |
| R1813 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1814 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W | |
| R1817 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1818 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1820 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1821 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1822 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1823 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1826 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1827 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W | |
| R1836 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R1851 | 1-217-671-11 | METAL CHIP | 1 | 5% | 1/10W | |
| R1852 | 1-217-671-11 | METAL CHIP | 1 | 5% | 1/10W | |
| R1853 | 1-217-671-11 | METAL CHIP | 1 | 5% | 1/10W | |
| R1855 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1856 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1857 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1859 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W | |
| R1860 | 1-216-864-11 | METAL CHIP | 0 | 5% | 1/16W | |
| R1861 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1862 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1863 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1865 | 1-216-851-11 | METAL CHIP | 330K | 5% | 1/16W | |
| R1867 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1868 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1869 | 1-216-019-00 | METAL CHIP | 56 | 5% | 1/10W | |
| R1872 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1873 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1874 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1875 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1876 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1877 | 1-216-841-11 | METAL CHIP | 47K | 5% | 1/16W | |
| R1878 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W | |
| R1880 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W | |
| R1881 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1882 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1883 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1884 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R1887 | 1-216-830-11 | METAL CHIP | 5.6K | 5% | 1/16W | |
| R1888 | 1-216-836-11 | METAL CHIP | 18K | 5% | 1/16W | |
| R1889 | 1-217-671-11 | METAL CHIP | 1 | 5% | 1/10W | |
| R1890 | 1-217-671-11 | METAL CHIP | 1 | 5% | 1/10W | |
| R1891 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/16W | |
| R1892 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R1893 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W | |
| R1894 | 1-216-817-11 | METAL CHIP | 470 | 5% | 1/16W | |
| R1895 | 1-216-800-11 | METAL GLAZE | 18 | 5% | 1/16W | |
| R1896 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R1897 | 1-216-808-11 | METAL CHIP | 82 | 5% | 1/16W | |
| R2051 | 1-216-835-11 | METAL CHIP | 15K | 5% | 1/16W | (TR2300E/TR3300E) |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| R2052 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | (TR2300E/TR3300E) |
| R2053 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E/TR3300E) |
| R2054 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E/TR3300E) |
| R2055 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | (TR2300E/TR3300E) |
| R2056 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | (TR2300E/TR3300E) |
| R2058 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | (TR2300E/TR3300E) |
| R2059 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | (TR2300E/TR3300E) |
| R2060 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | (TR2300E/TR3300E) |
| R2061 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | (TR2300E/TR3300E) |
| R2062 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | (TR2300E/TR3300E) |
| R2063 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | (TR2300E/TR3300E) |
| R2064 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | (TR2300E/TR3300E) |
| R2065 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | (TR2300E/TR3300E) |
| R2070 | 1-217-671-11 | METAL CHIP 1 5% 1/10W | (TR2300E/TR3300E) |
| R2071 | 1-217-671-11 | METAL CHIP 1 5% 1/10W | (TR2300E/TR3300E) |
| R2072 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | (TR2300E/TR3300E) |
| R2073 | 1-216-832-11 | METAL CHIP 8.2K 5% 1/16W | (TR2300E/TR3300E) |

< THERMISTOR >

| | | | |
|---|---|---|---|
| TH1751 | 1-809-360-21 | THERMISTOR, NTC (33K) | |

< VIBRATOR >

| | | | |
|---|---|---|---|
| X1305 | 1-767-029-21 | VIBRATOR, CRYSTAL (17MHz) | (TR2300E/TR3300E:AUS,E) |
| X1601 | 1-760-321-11 | VIBRATOR, CRYSTAL (28.375MHz) | |
| X1751 | 1-760-655-41 | VIBRATOR, CRYSTAL (20MHz) | |
| X1752 | 1-767-031-21 | VIBRATOR, CRYSTAL (11.79MHz) | |

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|---|---|---|---|
| * | A-7072-755-A | VF-95 (XCPE) BOARD, COMPLETE | (TR2300E/TR3300E) |

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(Ref. No. 5,000 Series)

< CAPACITOR >

| | | | |
|---|---|---|---|
| C851 | 1-162-967-11 | CERAMIC CHIP 0.0033uF 10% | 50V |
| C852 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% | 25V |
| C853 | 1-104-916-11 | TANTAL. CHIP 6.8uF 20% | 20V |
| C854 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% | 25V |
| C855 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% | 25V |
| C856 | 1-135-259-11 | TANTAL. CHIP 10uF 20% | 6.3V |
| C857 | 1-164-676-11 | CERAMIC CHIP 2200PF 5% | 16V |
| C858 | 1-135-180-21 | TANTALUM CHIP 3.3uF 20% | 6.3V |
| C859 | 1-164-227-11 | CERAMIC CHIP 0.022uF 10% | 25V |
| C860 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% | 25V |
| C865 | 1-164-217-11 | CERAMIC CHIP 150PF 5% | 50V |
| C867 | 1-109-982-11 | CERAMIC CHIP 1uF 10% | 10V |
| C868 | 1-165-128-11 | CERAMIC CHIP 0.22uF | 16V |
| C869 | 1-135-201-11 | TANTALUM CHIP 10uF 20% | 4V |
| C870 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% | 25V |
| C871 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% | 25V |
| C872 | 1-135-180-21 | TANTALUM CHIP 3.3uF 20% | 6.3V |
| C873 | 1-109-982-11 | CERAMIC CHIP 1uF 10% | 10V |
| C874 | 1-109-982-11 | CERAMIC CHIP 1uF 10% | 10V |
| C877 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% | 25V |
| C878 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% | 16V |
| C880 | 1-165-128-11 | CERAMIC CHIP 0.22uF | 16V |

< CONNECTOR >

| | | | |
|---|---|---|---|
| CN851 | 1-766-350-21 | CONNECTOR, FFC/FPC 20P | |
| CN852 | 1-766-637-21 | CONNECTOR, FFC/FPC 26P | |
| CN853 | 1-573-305-11 | CONNECTOR, BOARD TO BOARD 10P | |

< DIODE >

| | | | |
|---|---|---|---|
| D851 | 8-719-951-21 | DIODE PR1102W-TR | |
| D852 | 8-719-043-70 | DIODE MA6S121-(TX) | |
| D853 | 8-719-802-36 | DIODE 1SS250 | |

< IC >

| | | | |
|---|---|---|---|
| IC851 | 8-759-097-75 | IC MB3789PFV-G-BND-ER | |
| IC852 | 8-759-337-40 | IC NJM2904V(TE2) | |
| IC853 | 8-759-080-34 | IC TA75W01FU-TE12 | |
| IC854 | 8-759-082-60 | IC TC7S66FU(TE85R) | |
| IC855 | 8-759-338-78 | IC BA10324AFV-E2 | |
| IC857 | 8-759-079-66 | IC TC74VHC123AFS(EL) | |

< COIL >

| | | | |
|---|---|---|---|
| L853 | 1-412-033-11 | INDUCTOR CHIP 220uH | |
| L854 | 1-412-951-11 | INDUCTOR 10uH | |

< TRANSISTOR >

| | | | |
|---|---|---|---|
| Q851 | 8-729-822-05 | TRANSISTOR 2SD1622-ST-TD | |
| Q852 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q853 | 8-729-028-81 | TRANSISTOR DTA123JUA-T106 | |
| Q854 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q855 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| Q860 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q861 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| Q864 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q865 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q866 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q870 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| | | < RESISTOR > | |
| R832 | 1-216-797-11 | METAL CHIP 10 5% 1/16W | |
| R836 | 1-216-809-11 | METAL CHIP 100 5% 1/16W | |
| R840 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R841 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R842 | 1-216-829-11 | METAL CHIP 4.7K 5% 1/16W | |
| R843 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R844 | 1-216-150-91 | METAL GLAZE 10 5% 1/8W | |
| R846 | 1-216-826-11 | METAL CHIP 2.7K 5% 1/16W | |
| R847 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R849 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R850 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R851 | 1-216-819-11 | METAL CHIP 680 5% 1/16W | |
| R852 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R853 | 1-218-899-11 | METAL CHIP 150K 0.50% 1/16W | |
| R854 | 1-218-901-11 | METAL CHIP 180K 0.50% 1/16W | |
| R855 | 1-216-840-11 | METAL CHIP 39K 5% 1/16W | |
| R856 | 1-218-899-11 | METAL CHIP 150K 0.50% 1/16W | |
| R857 | 1-218-903-11 | METAL CHIP 220K 0.50% 1/16W | |
| R858 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R859 | 1-216-848-11 | METAL CHIP 180K 5% 1/16W | |
| R860 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R861 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R862 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R863 | 1-216-854-11 | METAL CHIP 560K 5% 1/16W | |
| R864 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R865 | 1-216-842-11 | METAL CHIP 56K 5% 1/16W | |
| R867 | 1-216-850-11 | METAL CHIP 270K 5% 1/16W | |
| R868 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R869 | 1-216-843-11 | METAL CHIP 68K 5% 1/16W | |
| R870 | 1-216-842-11 | METAL CHIP 56K 5% 1/16W | |
| R871 | 1-216-850-11 | METAL CHIP 270K 5% 1/16W | |
| R872 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R873 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R874 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R875 | 1-216-822-11 | METAL CHIP 1.2K 5% 1/16W | |
| R876 | 1-216-810-11 | METAL CHIP 120 5% 1/16W | |
| R877 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R878 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R879 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R880 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R881 | 1-216-853-11 | METAL CHIP 470K 5% 1/16W | |
| R882 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R884 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R885 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R886 | 1-216-838-11 | METAL CHIP 27K 5% 1/16W | |
| R887 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R888 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R889 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R890 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R891 | 1-216-296-91 | CONDUCTOR, CHIP (3216) | |
| R892 | 1-216-158-00 | METAL GLAZE 22 5% 1/8W | |
| R895 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R896 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R898 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R899 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |

* A-7072-756-A VF-96 (XCPE) BOARD, COMPLETE

(TR2300E/TR3300E)

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(Ref. No. 5,000 Series)

< CAPACITOR >

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C901 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C902 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C903 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C904 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C905 | 1-104-912-11 | TANTAL. CHIP 3.3uF 20% 16V | |
| C906 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C907 | 1-104-912-11 | TANTAL. CHIP 3.3uF 20% 16V | |
| C908 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C909 | 1-135-181-21 | TANTALUM CHIP 4.7uF 20% 6.3V | |
| C910 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C911 | 1-135-181-21 | TANTALUM CHIP 4.7uF 20% 6.3V | |
| C912 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C913 | 1-104-912-11 | TANTAL. CHIP 3.3uF 20% 16V | |
| C914 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C916 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C917 | 1-135-259-11 | TANTAL. CHIP 10uF 20% 6.3V | |
| C918 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C919 | 1-135-181-21 | TANTALUM CHIP 4.7uF 20% 6.3V | |
| C920 | 1-162-967-11 | CERAMIC CHIP 0.0033uF 10% 50V | |
| C921 | 1-164-357-11 | CERAMIC CHIP 1000PF 5% 50V | |
| C922 | 1-162-919-11 | CERAMIC CHIP 22PF 5% 50V | |
| C924 | 1-164-505-11 | CERAMIC CHIP 2.2uF 16V | |
| C925 | 1-107-826-11 | CERAMIC CHIP 0.1uF 10% 16V | |
| C927 | 1-135-178-11 | TANTAL. CHIP 1.5uF 20% 20V | |
| C929 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C930 | 1-135-179-21 | TANTAL. CHIP 2.2uF 20% 16V | |
| C931 | 1-164-156-11 | CERAMIC CHIP 0.1uF 25V | |
| C932 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C933 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| C934 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| C935 | 1-162-970-11 | CERAMIC CHIP 0.01uF 10% 25V | |
| | | < CONNECTOR > | |
| CN901 | 1-766-658-21 | CONNECTOR, FFC/FPC 22P | |
| CN902 | 1-573-925-11 | CONNECTOR, FFC/FPC (ZIF) 16P | |
| | | < DIODE > | |
| D901 | 8-713-102-80 | DIODE 1T369-01-T8A | |
| | | < IC > | |
| IC901 | 8-759-364-03 | IC MB88146PFV-G-BND-ER | |
| IC902 | 8-752-058-95 | IC CXA1515Q-T4 | |
| IC904 | 8-752-378-00 | IC CXD2411AR-T4 | |
| | | < COIL > | |
| L901 | 1-412-951-11 | INDUCTOR 10uH | |
| L902 | 1-412-951-11 | INDUCTOR 10uH | |
| L903 | 1-412-959-11 | INDUCTOR 47uH | |
| L904 | 1-412-955-11 | INDUCTOR 22uH | |
| L905 | 1-412-947-11 | INDUCTOR 4.7uH | |
| | | < TRANSISTOR > | |
| Q901 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q902 | 8-729-425-64 | TRANSISTOR 2SD2216Q | |
| | | < RESISTOR > | |
| R901 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R902 | 1-216-844-11 | METAL CHIP 82K 5% 1/16W | |
| R903 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R904 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R905 | 1-216-851-11 | METAL CHIP 330K 5% 1/16W | |
| R906 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R907 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R908 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R909 | 1-216-838-11 | METAL CHIP 27K 5% 1/16W | |
| R911 | 1-216-840-11 | METAL CHIP 39K 5% 1/16W | |
| R912 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R913 | 1-216-831-11 | METAL CHIP 6.8K 5% 1/16W | |
| R914 | 1-216-839-11 | METAL CHIP 33K 5% 1/16W | |
| R915 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R917 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R921 | 1-218-905-11 | METAL CHIP 270K 0.50% 1/16W | |
| R922 | 1-218-877-11 | METAL CHIP 18K 0.50% 1/16W | |
| R923 | 1-216-849-11 | METAL CHIP 220K 5% 1/16W | |
| R924 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R929 | 1-216-828-11 | METAL CHIP 3.9K 5% 1/16W | |
| R930 | 1-216-838-11 | METAL CHIP 27K 5% 1/16W | |
| R934 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R935 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |
| R936 | 1-216-825-11 | METAL CHIP 2.2K 5% 1/16W | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| * | A-7066-841-A | VF-104 (XP) BOARD, COMPLETE (TR2200E)<br>****************************<br>(Ref. No. 7,000 Series) | |
| | | < CAPACITOR > | |
| C901 | 1-107-854-11 | TANTAL. CHIP 68uF 20% 6.3V | |
| C902 | 1-163-038-91 | CERAMIC CHIP 0.1uF 25V | |
| C903 | 1-135-145-11 | TANTALUM CHIP 0.47uF 10% 35V | |
| C904 | 1-162-965-11 | CERAMIC CHIP 0.0015uF 10% 50V | |
| C905 | 1-104-752-11 | TANTAL. CHIP 33uF 20% 6.3V | |
| C906 | 1-162-638-11 | CERAMIC CHIP 1uF 16V | |
| C907 | 1-104-563-11 | FILM CHIP 0.1uF 5% 16V | |
| C908 | 1-162-920-11 | CERAMIC CHIP 27PF 5% 50V | |
| C909 | 1-163-009-11 | CERAMIC CHIP 0.001uF 10% 50V | |
| ⚠C910 | 1-164-758-11 | CERAMIC CHIP 0.0039uF 5% 50V | |
| ⚠C911 | 1-164-715-11 | CERAMIC CHIP 0.0068uF 5% 50V | |
| C912 | 1-107-854-11 | TANTAL. CHIP 68uF 20% 6.3V | |
| C913 | 1-135-145-11 | TANTALUM CHIP 0.47uF 10% 35V | |
| C914 | 1-107-689-21 | TANTAL. CHIP 1uF 20% 35V | |
| C915 | 1-163-037-11 | CERAMIC CHIP 0.022uF 10% 25V | |
| C916 | 1-164-611-11 | CERAMIC CHIP 0.001uF 10% 500V | |
| | | < CONNECTOR > | |
| CN901 | 1-573-506-41 | CONNECTOR, FPC (NON ZIF) 4P | |
| CN902 | 1-573-290-21 | PIN, CONNECTOR (1.5MM)(SMD) 4P | |
| | | < DIODE > | |
| D901 | 8-719-951-21 | DIODE PR1102W-TR (TALLY) | |
| D903 | 8-719-404-49 | DIODE MA111 | |
| | | < IC > | |
| IC901 | 8-759-196-14 | IC BA7149F-E2 | |
| | | < COIL > | |
| L901 | 1-412-031-11 | INDUCTOR CHIP 47uH | |
| L902 | 1-410-387-11 | INDUCTOR CHIP 33uH | |
| ⚠L903 | 1-411-697-11 | COIL, FERRITE (HLC) | |
| | | < TRANSISTOR > | |
| Q901 | 8-729-230-63 | TRANSISTOR 2SC4116-YG | |
| Q902 | 8-729-106-68 | TRANSISTOR 2SD1615A-GP | |
| Q903 | 8-729-216-31 | TRANSISTOR 2SA1163-G | |
| Q904 | 8-729-230-63 | TRANSISTOR 2SC4116-YG | |
| | | < RESISTOR > | |
| R901 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R902 | 1-216-817-11 | METAL CHIP 470 5% 1/16W | |
| R903 | 1-216-057-00 | METAL CHIP 2.2K 5% 1/10W | |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| R904 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R905 | 1-216-822-11 | METAL CHIP | 1.2K | 5% | 1/16W | |
| R906 | 1-216-823-11 | METAL CHIP | 1.5K | 5% | 1/16W | |
| R907 | 1-216-845-11 | METAL CHIP | 100K | 5% | 1/16W | |
| R908 | 1-216-852-11 | METAL CHIP | 390K | 5% | 1/16W | |
| R909 | 1-216-833-11 | METAL CHIP | 10K | 5% | 1/16W | |
| R910 | 1-216-835-11 | METAL CHIP | 15K | 5% | 1/16W | |
| R911 | 1-216-160-00 | METAL GLAZE | 27 | 5% | 1/8W | |
| R912 | 1-216-857-11 | METAL CHIP | 1M | 5% | 1/16W | |
| R913 | 1-216-820-11 | METAL CHIP | 820 | 5% | 1/16W | |
| R914 | 1-216-813-11 | METAL CHIP | 220 | 5% | 1/16W | |
| R915 | 1-216-793-11 | METAL GLAZE | 4.7 | 5% | 1/16W | |
| R916 | 1-218-881-11 | METAL CHIP | 27K | 0.50% | 1/16W | |
| R917 | 1-218-893-11 | METAL CHIP | 82K | 0.50% | 1/16W | |
| R918 | 1-216-829-11 | METAL CHIP | 4.7K | 5% | 1/16W | |
| R919 | 1-216-839-11 | METAL CHIP | 33K | 5% | 1/16W | |
| R920 | 1-216-837-11 | METAL CHIP | 22K | 5% | 1/16W | |
| R921 | 1-216-795-11 | METAL GLAZE | 6.8 | 5% | 1/16W | |
| R922 | 1-216-847-11 | METAL CHIP | 150K | 5% | 1/16W | |
| R923 | 1-216-857-11 | METAL CHIP | 1M | 5% | 1/16W | |
| R924 | 1-216-862-11 | METAL GLAZE | 2.7M | 5% | 1/16W | |
| R925 | 1-216-862-11 | METAL GLAZE | 2.7M | 5% | 1/16W | |
| R926 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R927 | 1-216-821-11 | METAL CHIP | 1K | 5% | 1/16W | |
| R928 | 1-216-827-11 | METAL CHIP | 3.3K | 5% | 1/16W | |
| R929 | 1-216-818-11 | METAL CHIP | 560 | 5% | 1/16W | |

< VARIABLE RESISTOR >

| | | |
|---|---|---|
| RV903 | 1-238-852-11 | RES, ADJ, CERMET 470 |
| RV904 | 1-223-566-11 | RES, ADJ, METAL GLAZE 1M |

< TRANSFORMER >

| | | |
|---|---|---|
| ⚠T901 | 1-453-124-11 | TRANSFORMER ASSY, FLYBACK |

< THERMISTOR >

| | | |
|---|---|---|
| TH901 | 1-809-350-21 | THERMISTOR, NTC (470) |

< SOCKET >

| | | |
|---|---|---|
| ⚠W901 | 1-540-019-21 | SOCKET ASSY, CRT |

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* A-7072-692-A VP-45 (XCR) BOARD, COMPLETE

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(Ref. No. 9,000 Series)

< CAPACITOR >

| Ref. No. | Part No. | Description | | | | Remark |
|---|---|---|---|---|---|---|
| C601 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C602 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C603 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V | |
| C604 | 1-163-809-11 | CERAMIC CHIP | 0.047uF | 10% | 25V | |
| C605 | 1-128-257-21 | ELECT CHIP | 33uF | 20% | 10V | |
| C606 | 1-163-037-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C607 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C609 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V | |
| C610 | 1-104-847-11 | TANTAL. CHIP | 22uF | 20% | 4V | |
| C612 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V | |
| C613 | 1-163-037-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C614 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C615 | 1-163-809-11 | CERAMIC CHIP | 0.047uF | 10% | 25V | |
| C616 | 1-128-257-21 | ELECT CHIP | 33uF | 20% | 10V | |
| C617 | 1-135-149-21 | TANTALUM CHIP | 2.2uF | 20% | 10V | |
| C618 | 1-135-149-21 | TANTALUM CHIP | 2.2uF | 20% | 10V | |
| C619 | 1-110-563-11 | CERAMIC CHIP | 0.068uF | 10% | 16V | |
| C620 | 1-110-563-11 | CERAMIC CHIP | 0.068uF | 10% | 16V | |
| C621 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C622 | 1-165-176-11 | CERAMIC CHIP | 0.047uF | 10% | 16V | |
| C623 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C624 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V | |
| C625 | 1-164-227-11 | CERAMIC CHIP | 0.022uF | 10% | 25V | |
| C627 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | |
| C628 | 1-162-964-11 | CERAMIC CHIP | 0.001uF | 10% | 50V | |
| C629 | 1-162-967-11 | CERAMIC CHIP | 0.0033uF | 10% | 50V | |
| C634 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V | |
| C635 | 1-107-823-11 | CERAMIC CHIP | 0.47uF | 10% | 16V | |
| C636 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C638 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C639 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C640 | 1-135-151-21 | TANTALUM CHIP | 4.7uF | 20% | 4V | |
| C641 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C642 | 1-135-201-11 | TANTALUM CHIP | 10uF | 20% | 4V | |
| C643 | 1-135-259-11 | TANTAL. CHIP | 10uF | 20% | 6.3V | |
| C644 | 1-164-156-11 | CERAMIC CHIP | 0.1uF | | 25V | |
| C645 | 1-162-974-11 | CERAMIC CHIP | 0.01uF | | 50V | |
| C646 | 1-162-970-11 | CERAMIC CHIP | 0.01uF | 10% | 25V | |

< CONNECTOR >

| | | |
|---|---|---|
| CN601 | 1-766-343-21 | CONNECTOR, FFC/FPC 13P |
| CN603 | 1-766-343-21 | CONNECTOR, FFC/FPC 13P |

< IC >

| | | | |
|---|---|---|---|
| IC601 | 8-759-234-77 | IC | TC4S66F |
| IC602 | 8-759-058-45 | IC | NJM3403AV(TE2) |
| IC603 | 8-759-080-34 | IC | TA75W01FU-TE12R |
| IC604 | 8-759-234-77 | IC | TC4S66F |
| IC605 | 8-759-337-41 | IC | NJM2902V(TE2) |
| IC606 | 8-759-058-45 | IC | NJM3403AV(TE2) |
| IC607 | 8-759-359-49 | IC | NJM3414AV(TE2) |
| IC608 | 8-759-359-49 | IC | NJM3414AV(TE2) |
| IC609 | 8-759-248-78 | IC | MB88102PFV-G-BND-ER |

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| IC610 | 8-759-050-51 | IC SN74HCT04APW-E20 | |
| IC611 | 8-752-867-94 | IC CXP81120-017R | |
| | | < COIL > | |
| L601 | 1-412-058-11 | INDUCTOR CHIP 10uH | |
| L602 | 1-412-951-11 | INDUCTOR 10uH | |
| L603 | 1-412-963-11 | INDUCTOR 100uH | |
| L604 | 1-412-951-11 | INDUCTOR 10uH | |
| | | < TRANSISTOR > | |
| Q601 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q602 | 8-729-425-50 | TRANSISTOR 2SB1462Q | |
| Q603 | 8-729-013-31 | TRANSISTOR 2SA1588-OY-TE85L | |
| Q604 | 8-729-429-18 | TRANSISTOR UN9213 | |
| Q605 | 8-729-037-76 | TRANSISTOR UN9215J-(TX).SO | |
| | | < RESISTOR > | |
| R601 | 1-216-803-11 | METAL CHIP 33 5% 1/16W | |
| R602 | 1-218-911-11 | METAL CHIP 470K 0.50% 1/16W | |
| R603 | 1-218-911-11 | METAL CHIP 470K 0.50% 1/16W | |
| R604 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R605 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R606 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R607 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R608 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R609 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R610 | 1-216-850-11 | METAL CHIP 270K 5% 1/16W | |
| R611 | 1-216-850-11 | METAL CHIP 270K 5% 1/16W | |
| R612 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R613 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R614 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R615 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R616 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R617 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R618 | 1-218-911-11 | METAL CHIP 470K 0.50% 1/16W | |
| R619 | 1-218-911-11 | METAL CHIP 470K 0.50% 1/16W | |
| R620 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R621 | 1-218-843-11 | METAL CHIP 680 0.50% 1/16W | |
| R622 | 1-218-843-11 | METAL CHIP 680 0.50% 1/16W | |
| R624 | 1-218-871-11 | METAL CHIP 10K 0.50% 1/16W | |
| R625 | 1-218-871-11 | METAL CHIP 10K 0.50% 1/16W | |
| R626 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R627 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R628 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R629 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R630 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R631 | 1-216-837-11 | METAL CHIP 22K 5% 1/16W | |
| R633 | 1-218-847-11 | METAL CHIP 1K 0.50% 1/16W | |
| R634 | 1-218-847-11 | METAL CHIP 1K 0.50% 1/16W | |
| R635 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| R636 | 1-218-871-11 | METAL CHIP 10K 0.50% 1/16W | |
| R637 | 1-216-845-11 | METAL CHIP 100K 5% 1/16W | |
| R638 | 1-218-895-11 | METAL CHIP 100K 0.50% 1/16W | |
| R639 | 1-218-871-11 | METAL CHIP 10K 0.50% 1/16W | |
| R640 | 1-218-895-11 | METAL CHIP 100K 0.50% 1/16W | |
| R641 | 1-218-859-11 | METAL CHIP 3.3K 0.50% 1/16W | |
| R643 | 1-218-895-11 | METAL CHIP 100K 0.50% 1/16W | |
| R644 | 1-218-859-11 | METAL CHIP 3.3K 0.50% 1/16W | |
| R645 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R646 | 1-218-903-11 | METAL CHIP 220K 0.50% 1/16W | |
| R647 | 1-218-903-11 | METAL CHIP 220K 0.50% 1/16W | |
| R648 | 1-216-835-11 | METAL CHIP 15K 5% 1/16W | |
| R649 | 1-218-895-11 | METAL CHIP 100K 0.50% 1/16W | |
| R651 | 1-218-887-11 | METAL CHIP 47K 0.50% 1/16W | |
| R652 | 1-218-887-11 | METAL CHIP 47K 0.50% 1/16W | |
| R653 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R654 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R655 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R656 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R657 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R658 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R659 | 1-216-857-11 | METAL CHIP 1M 5% 1/16W | |
| R660 | 1-216-821-11 | METAL CHIP 1K 5% 1/16W | |
| R663 | 1-216-833-11 | METAL CHIP 10K 5% 1/16W | |
| R664 | 1-216-841-11 | METAL CHIP 47K 5% 1/16W | |
| R665 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| R667 | 1-216-864-11 | METAL CHIP 0 5% 1/16W | |
| | | < SENSOR > | |
| SE601 | 1-810-889-81 | SENSOR, ANGULAR VELOCITY (PITCH) | |
| SE602 | 1-810-889-71 | SENSOR, ANGULAR VELOCITY (YAW) | |
| | | < VIBRATOR > | |
| X601 | 1-579-553-11 | VIBRATOR (12MHz) | |

### MISCELLANEOUS
*************

| Ref.No. | Part No. | Description | Remark |
|---|---|---|---|
| 24 | 8-917-540-90 | REMOCON RMT-715//M SET (TR2300E:JE/TR3300E:AUS,E) | |
| 25 | 8-917-541-90 | REMOCON RMT-716//M SET (TR2200E/TR2300E:E,HK/TR3300E:AEP,UK) | |
| 56 | 1-473-691-11 | SWITCH BLOCK, CONTROL | |
| 112 | 1-660-297-11 | FP-423 FLEXIBLE BOARD | |
| 113 | 1-473-603-11 | SWITCH BLOCK, CONTROL(CF-6400) | |
| 155 | 1-660-296-11 | FP-420 FLEXIBLE BOARD | |
| 163 | 1-660-285-11 | FP-386 FLEXIBLE BOARD | |
| 208 | 1-660-303-11 | FP-395 FLEXIBLE BOARD | |
| 252 | 1-660-278-11 | FP-378 FLEXIBLE BOARD | |
| 256 | 1-660-279-11 | FP-379 FLEXIBLE BOARD | |

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| 257 | 1-660-293-11 | FP-376 FLEXIBLE BOARD | |
| 259 | 1-661-228-11 | FP-462 FLEXIBLE BOARD | |
| 261 | 1-660-295-11 | FP-419 FLEXIBLE BOARD | |
| 262 | 1-660-283-11 | FP-383 FLEXIBLE BOARD | |
| 263 | 1-660-300-11 | FP-426 FLEXIBLE BOARD | |
| 266 | 1-660-298-11 | FP-401 FLEXIBLE BOARD | |
| 267 | 1-660-531-11 | FP-429 FLEXIBLE BOARD | |
| 301 | 1-661-052-11 | FP-457 FLEXIBLE BOARD | |
| 309 | 1-547-767-41 | FILTER BLOCK, OPTICAL | |
| 315 | 1-660-294-11 | FP-400 FLEXIBLE BOARD | |
| 760 | 1-658-213-11 | FP-355 FLEXIBLE BOARD | |
| 762 | 1-657-786-11 | FP-221 FLEXIBLE BOARD | |
| 764 | 1-658-214-11 | FP-356 FLEXIBLE BOARD | |
| 803 | 1-657-785-11 | FP-248 FLEXIBLE BOARD | |
| 817 | 1-657-784-11 | FP-220 FLEXIBLE BOARD | |
| BL002 | 1-517-527-11 | LIGHT, BACK | |
| ⚠BL802 | 1-519-746-91 | TUBE, FLUORESCENT (0.7 INCH) | |
| CN901 | 1-774-867-11 | CONNECTOR, EXTERNAL (HOT SHOE) 8P | |
| D001 | 8-719-988-42 | DIODE GL453 | |
| IC401 | A-7030-744-A | CCD BLOCK ASSY (AUTO)(079 SERVICE)<br>(CCD IMAGER) | |
| J201 | 1-537-747-21 | TERMINAL BOARD | |
| J901 | 1-694-076-11 | TERMINAL BOARD, BATTERY (TR2300E) | |
| J901 | 1-694-076-21 | TERMINAL BOARD, BATTERY(TR2200E/TR3300E) | |
| J902 | 1-565-276-21 | JACK, ULTRA SMALL 1P (LANC) | |
| J903 | 1-695-514-21 | JACK (SMALL TYPE) 1P (HEADPHONE) | |
| LCD901 | 1-801-206-11 | DISPLAY PANEL, LIQUID CRYSTAL | |
| LCD902 | 8-753-016-07 | LCX009AK-4 | |
| M901 | A-7048-810-A | DRUM ASSY (DGH-0C4A-R) | |
| M902 | 8-835-531-01 | MOTOR, DC SCE-0601A (CAPSTAN) | |
| M903 | X-3945-401-1 | MOTOR ASSY, DC (LOADING) | |
| MIC901 | 1-542-259-11 | MICROPHONE, CAP (Lch) | |
| MIC902 | 1-542-259-11 | MICROPHONE, CAP (Rch) | |
| S001 | 1-692-614-11 | SWITCH, PUSH (3 KEY)<br>(Hi8 MP, ME/MP, REC PROOF) | |
| S002 | 1-572-688-11 | SWITCH, PUSH (1 KEY)(C.C. LOCK) | |
| S901 | 1-762-436-11 | SWITCH, ROTARY (ENCODER) | |
| S903 | 1-571-315-11 | SWITCH, KEY BOARD (START/STOP) | |
| S904 | 1-553-977-00 | SWITCH, SLIDE (STANDBY/LOCK) | |
| SE601 | 1-810-889-81 | SENSOR, ANGULAR VELOCITY (PITCH) | |
| SE602 | 1-810-889-71 | SENSOR, ANGULAR VELOCITY (YAW) | |
| ⚠V901 | 1-452-673-31 | CRT ASSY | |

ACCESSORIES & PACKING MATERIALS
********************************

| Ref. No. | Part No. | Description | Remark |
|---|---|---|---|
| | 1-575-334-11 | CORD, CONNECTION<br>(A/V connecting cable (STEREO), 1.5m) | |
| ⚠ | 1-764-622-11 | ADAPTOR, CONVERSION, 2P<br>(TR2200E/TR2300E/TR3300E:AEP, UK) | |
| | 1-769-166-11 | CORD, CONNECTION<br>(AC POWER ADAPTOR connecting cable, 2.1m)<br>(TR2200E:AEP) | |
| | 3-856-204-11 | MANUAL, INSTRUCTION (ENGLISH, SPANISH)<br>(TR2200E/TR3300E:AEP, UK) | |
| | 3-856-204-41 | MANUAL, INSTRUCTION (GERMAN, ITALIAN)<br>(TR2200E:AEP/TR3300E:AEP) | |
| | 3-856-204-51 | MANUAL, INSTRUCTION (FRENCH, DUTCH)<br>(TR2200E:AEP/TR3300E:AEP) | |
| | 3-856-204-61 | MANUAL, INSTRUCTION (SWEDISH, PORTUGUESE)<br>(TR2200E:AEP/TR3300E:AEP) | |
| | 3-856-548-11 | MANUAL, INSTRUCTION (ENGLISH, RUSSIAN)<br>(TR2300E/TR3300E:AUS, E) | |
| | 3-856-548-21 | MANUAL, INSTRUCTION (FRENCH, GERMAN)<br>(TR2300E:E/TR3300E:E) | |
| | 3-856-548-31 | MANUAL, INSTRUCTION (ARABIC, PERSIAN)<br>(TR2300E:E/TR3300E:E) | |
| | 3-856-548-41 | MANUAL, INSTRUCTION (CHINESE)<br>(TR2300E:E/TR3300E:E) | |
| | 3-947-969-21 | BELT (S), SHOULDER | |
| * | 3-970-769-01 | CUSHION, ACC | |
| * | 3-970-770-01 | CUSHION (LOWER) | |
| * | 3-970-771-01 | INDIVIDUAL CARTON (TR2200E) | |
| * | 3-970-771-21 | INDIVIDUAL CARTON (TR2300E) | |
| * | 3-971-418-01 | INDIVIDUAL CARTON (TR3300E) | |
| | 8-917-540-90 | REMOCON RMT-715//M SET<br>(TR2300E/TR3300E:AUS, E) | |
| | 8-917-541-90 | REMOCON RMT-716//M SET<br>(TR2200E/TR3300E:AEP, UK) | |
| ⚠ | A-7009-236-A | AC-V315 POWER ADAPTOR (TR2300E:E, JE) | |
| ⚠ | A-7009-238-A | AC-V316 POWER ADAPTOR (TR2300E:HK) | |
| ⚠ | A-7009-240-A | AC-V315 POWER ADAPTOR<br>(TR2200E/TR3300E: AEP) | |
| ⚠ | A-7009-241-A | AC-V315 POWER ADAPTOR (TR3300E:UK) | |
| ⚠ | A-7009-242-A | AC-V315 POWER ADAPTOR (TR3300E:E) | |
| ⚠ | A-7009-243-A | AC-V315 POWER ADAPTOR (TR3300E:E, AUS) | |
| | A-7092-699-A | CASE (L) ASSY, BATTERY | |
| ** | HSA-515 | HANDYCAM STATION | |
| ** | HSA-EC1 | EDIT STATION | |
| *** | NP-F530 | BATTERY PACK | |

Note.

** MARK PARTS IS AVAILABLE FOR REPAIR SERVICE.

*** MARK PARTS IS AVAILABLE AS AN OPTIONAL ACCESSORY.

Be sure to read "Note on the CCD Imager replacement" on page 4–8 when changing the CCD imager.

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

# SECTION 6
# ADJUSTMENTS

## 6-1. CAMERA SECTION ADJUSTMENTS

**Refer to page 2 as for "Table for difference of functions" of models and classiffication.**

## 1-1. PREPARATIONS BEFORE ADJUSTMENT (CAMERA SECTION)

### 1-1-1. List of Service Tools

- Oscilloscope
- Adjusting driver
- Color monitor
- Regulated power supply
- Vectorscope
- Digital voltmeter

| Ref. No. | Name | Parts Code | Usage |
|---|---|---|---|
| J-1 | Filter for color temperature correction (C14) | J-6080-058-A | Auto white balance adjustment/check<br>White balance adjustment/check |
| J-2 | ND filter 1.0 | J-6080-808-A | White balance check |
| | ND filter 0.3 | J-6080-818-A | White balance check |
| J-3 | Pattern box PTB-450 | J-6082-200-A | |
| J-4 | Color chart for pattern box | J-6020-250-A | |
| J-5 | Adjusting remote commander (RM-95-remodeled partly)Note 1 | J-6082-053-B | |
| J-6 | Siemens star | J-6080-875-A | For checking the flange back |
| J-7 | CPC-5 jig | J-6082-351-A | For the color viewfinder adjustment<br>For adjusting the video section |
| J-8 | Power code | J-6082-223-A | For connecting the battery terminal and DC power supply |
| J-9 | AFM DEV jig | J-6082-312-A | For adjusting the deviation |
| J-10 | Extension cable (60P, 0.5 mm) | J-6082-356-A | For extension between the HI-40 board (CN501) and VC-177 board (CN110) |
| J-11 | Clear chart | J-6080-621-A | |
| J-12 | Extension cable (16P, 0.5 mm) | J-6082-357-A | For extension between the CD-149 board (CN112) and VC-177 board (CN112) |
| J-13 | Extension cable (50P, 0.5 mm) | J-6082-355-A | For extension between the MM-32 board (CN701) and VC-177 board (CN204) |
| J-14 | EZ clip jig | J-6082-244-A | For extension between the EZ-21 board (CN201) and VC-177 board (CN204) |

**Note 1:** If the micro processor IC in the adjusting remote commander is not the new micro processor (UPD7503G-C56-12), the pages cannot be switched. In this case, replace with the new micro processor (8-759-148-35).

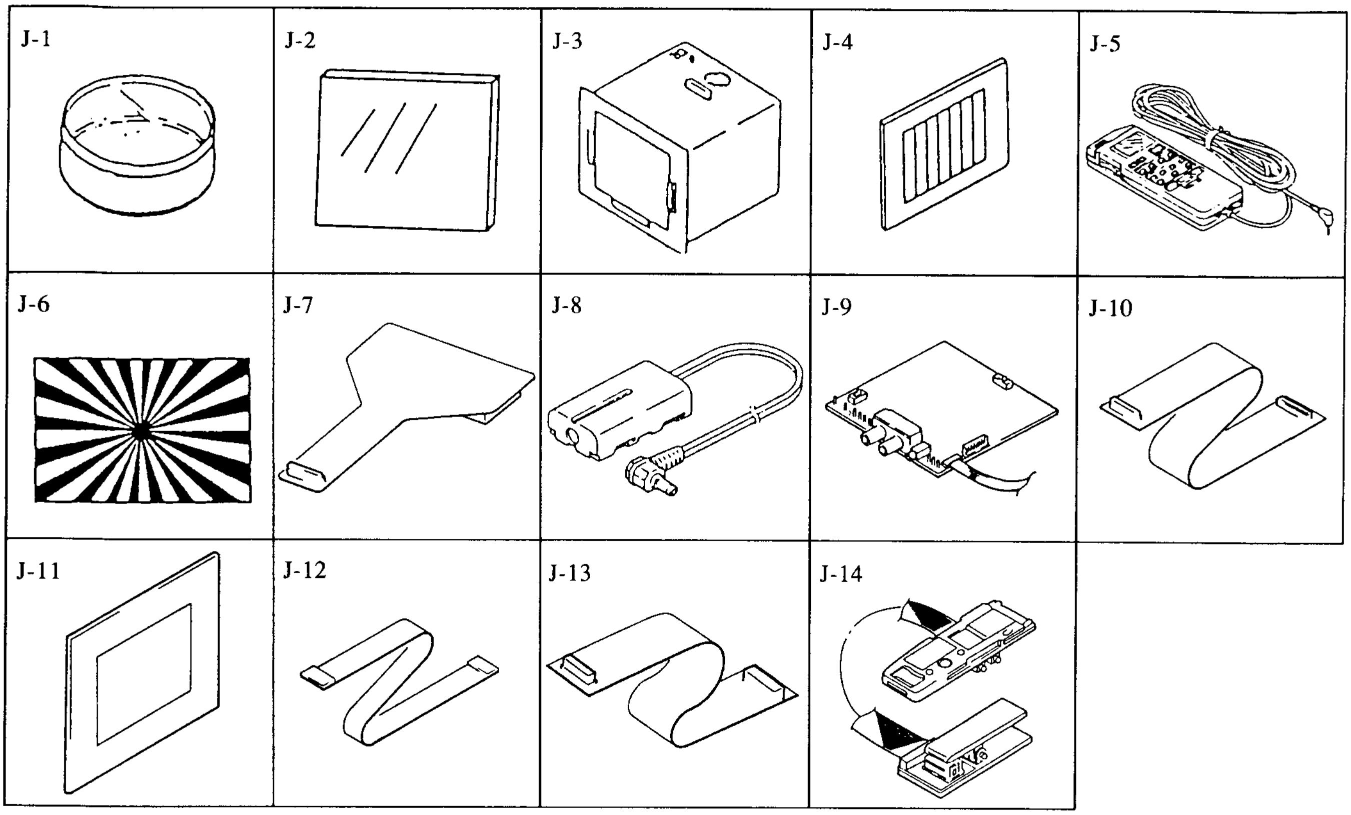

J-1
J-2
J-3
J-4
J-5
J-6
J-7
J-8
J-9
J-10
J-11
J-12
J-13
J-14

**Fig. 6-1-1.**

### 1-1-2. Preparations

**Note 1:** Refer to "Section 2. DISASSEMBLY" for details of how to remove the cabinet and boards.

**Note 2:** If performing only adjustments, the lens block and VC-177 board need not be adjusted.

1) Connect the adjusting equipment according to Fig. 6-1-3.
2) The F panel block (MA-269 board and focus ring) is not needed to connect to the unit. Disconnect the following connectors when removing the F panel block.
    1. CN107 of VC-177 board (14P, 0.5 mm)
    2. 8P connector of the focus ring

**Note 3:** Set the focus with the PUSH AUTO button (CF block S123).

3) By setting the "forced camera power ON mode", the camera power supply can be turned on even if the camera power supply (R) (CF block, LC-53 board) has been removed. However, focus operations cannot be performed. Disconnect the following connectors when removing the cabinet (R).
    1. CN111 of VC-177 board (20P, 0.5 mm)
    2. CN502 of HI-40 board (24P, 0.5 mm)

After the adjustments, be sure to exit the "forced camera power supply ON mode".

**Note 4:** Setting the "forced camera power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.

The camera power supply can be turned ON even if the cabinet (R) has been removed using the above steps. After completing adjustments, be sure to exit the "forced power supply ON mode".

**Note 5:** Exiting the "forced camera ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 1, address: 01.

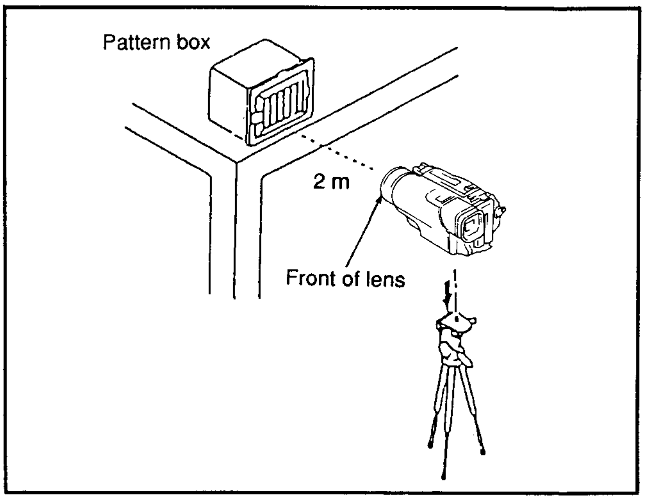
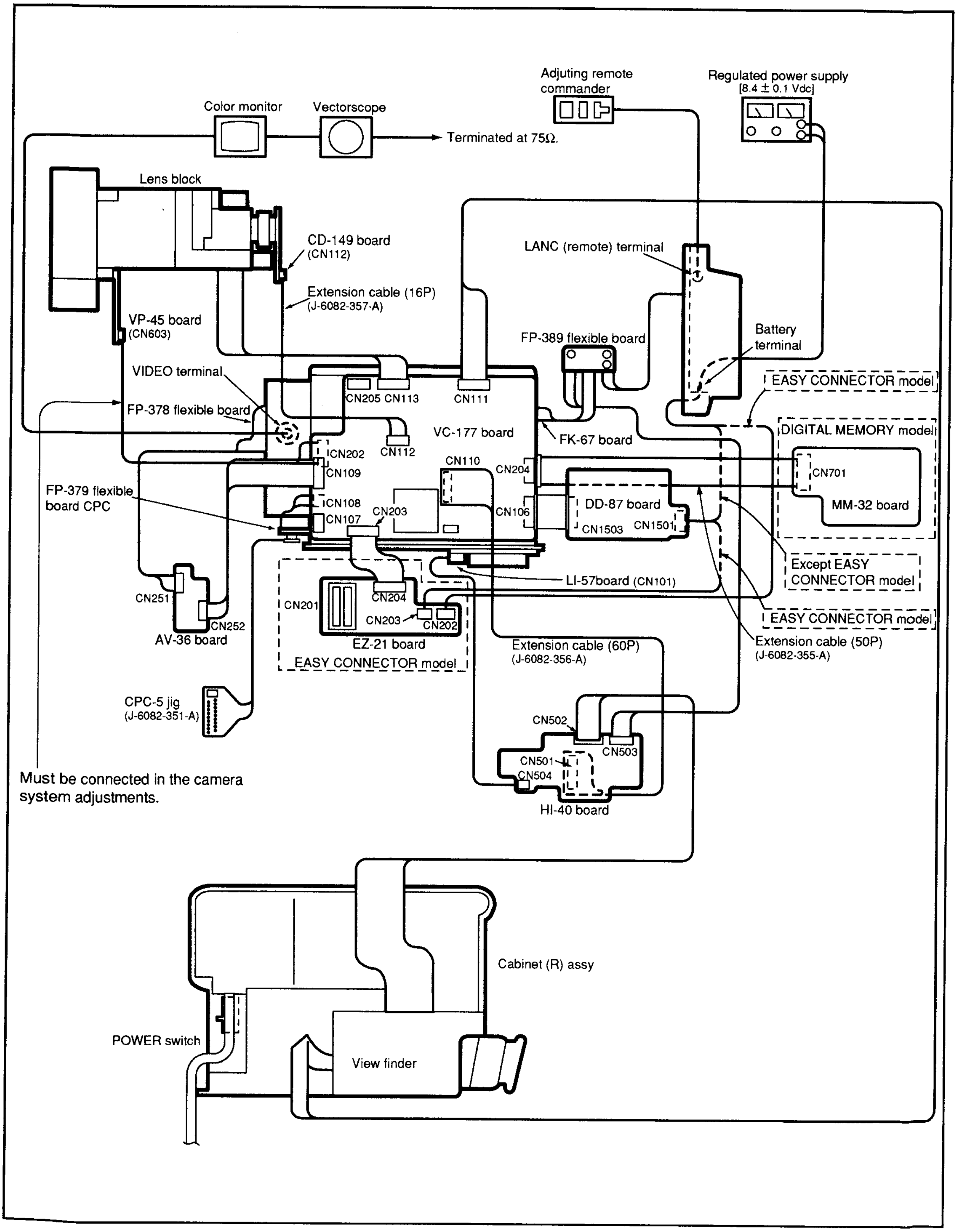


Fig. 6-1-2.


Adjuting remote commander
Regulated power supply
[8.4 ± 0.1 Vdc]
Color monitor
Vectorscope
Terminated at 75Ω.
Lens block
CD-149 board
(CN112)
Extension cable (16P)
(J-6082-357-A)
LANC (remote) terminal
VP-45 board
(CN603)
FP-389 flexible board
Battery terminal
VIDEO terminal
EASY CONNECTOR model
CN205 CN113
CN111
FP-378 flexible board
VC-177 board
FK-67 board
DIGITAL MEMORY model
CN202
CN112
CN109
CN110
CN204
CN701
FP-379 flexible board CPC
CN108
CN203
DD-87 board
CN106
MM-32 board
CN107
CN1503
CN1501
Except EASY CONNECTOR model
LI-57board (CN101)
CN251
CN201
CN204
CN203
CN202
EASY CONNECTOR model
CN252
AV-36 board
EZ-21 board
EASY CONNECTOR model
Extension cable (60P)
(J-6082-356-A)
Extension cable (50P)
(J-6082-355-A)
CPC-5 jig
(J-6082-351-A)
CN502
CN503
CN501
CN504
HI-40 board
Cabinet (R) assy
POWER switch
View finder

Must be connected in the camera system adjustments.

Fig. 6-1-3.

### 1-1-3. Precautions

#### 1. Switch settings

Adjust the switches to the following positions, and adjust without loading the cassette tape, unless specified otherwise.

1. Camera/Player (or VTR) power switch (S101 on CF block) .............................................. Camera
2. Digital zoom switch (Menu display) ........................... Off
3. Steady shot switch (S103 on CF block) ...................... Off
4. Focus switch (S102 on CF block) ........................ Manual
5. Auto lock switch (S121 on CF block) ............... Auto lock
6. AE shift (Menu display) ........................................... Center
7. Back light switch (S106 on CF block) ........................ Off
8. 16:9 WIDE button (S114 on CF block) ....................... Off
9. Picture effect button (S112 on CF block) .................... Off
10. Digital effect button (S122 on CF block) .................... Off

#### 2. Adjusting Procedure

Adjust in the given order.

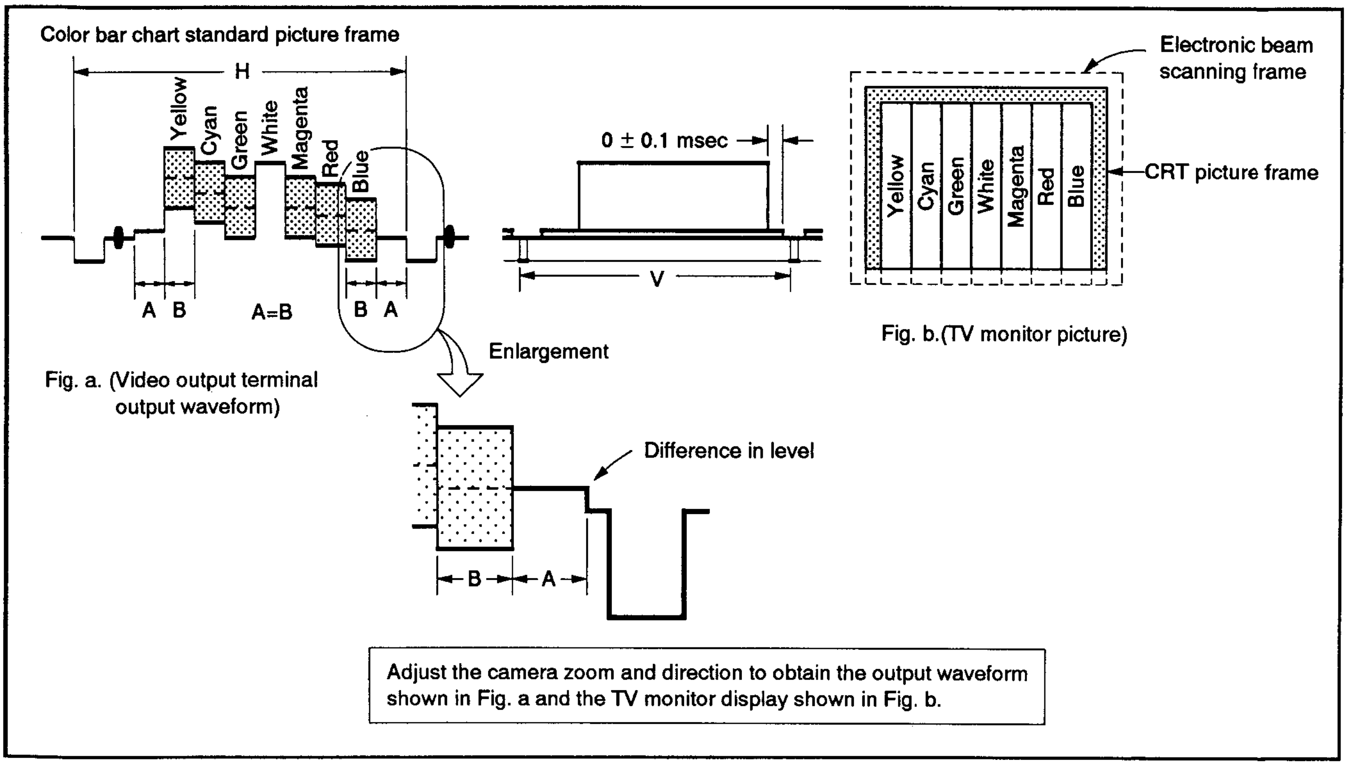

Color bar chart standard picture frame
H
Yellow
Cyan
Green
White
Magenta
Red
Blue
A B
A=B
B A
0 ± 0.1 msec
V
Enlargement
Difference in level
B
A
Electronic beam scanning frame
CRT picture frame
Yellow
Cyan
Green
White
Magenta
Red
Blue

Fig. a. (Video output terminal output waveform)

Fig. b.(TV monitor picture)

Adjust the camera zoom and direction to obtain the output waveform shown in Fig. a and the TV monitor display shown in Fig. b.

**Fig. 6-1-4.**

#### 3. Subject

1) Color bar chart (Standard picture frame)
   Adjust the picture frame as shown in Fig. 6-1-4. if adjustments are performed using the color bar chart. (Standard picture frame)
2) White pattern (Standard picture frame)
   Remove the color bar chart from the pattern box, and insert a clear chart in its place. (Do not perform zoom operations during this time.)
3) Chart for flange back adjustment
   Combine a white A0 size (1189 mm x 841 mm) paper to a black one, and make the chart shown in Fig. 6-1-5.

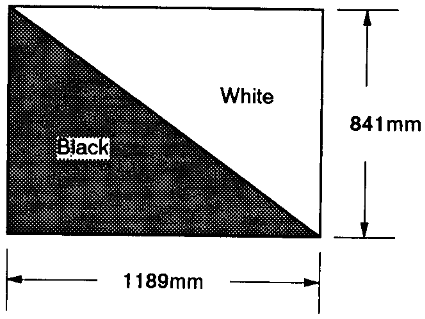

White
Black
841mm
1189mm

**Fig. 6-1-5.**

**Note:** Use the non-reflecting and non-glazing vellum paper whose size is more than A0, and make the boundary between white and black to be smoothly flat.

### 1-1-4. Adjusting Remote Commander

The adjusting remote commander is used for changing the calculation coefficient in signal processing, EVR data, etc. The adjusting remote commander performs bi-directional communication with the unit using the remote commander signal line (LANC). The resultant data of this bi-directional communication is written in the non-volatile memory.

### 1. Using the adjusting remote commander

1) Connect the adjusting remote commander to the remote terminal.
2) Adjust the HOLD switch of the adjusting remote commander to "HOLD" (SERVICE position).

If it has been properly connected, the LCD on the adjusting remote commander will display as shown in Fig. 6-1-6.

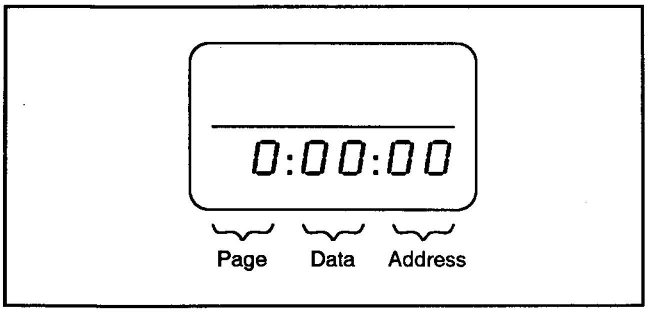


Fig. 6-1-6.

3) Operate the adjusting remote commander as follows.
   - Changing the page
     The page increases when the EDIT SEARCH+ button is pressed, and decreases when the EDIT SEARCH– button is pressed. There are altogether 16 pages, from 0 to F.
   - Changing the address
     The address increases when the FF (▶▶) button is pressed, and decreases when the REW (◀◀) button is pressed. There are altogether 256 addresses, from 00 to FF.
   - Changing the data (Data setting)
     The data increases when the PLAY (▶) button is pressed, and decreases when the STOP (■) button is pressed.
     There are altogether 256 data, from 00 to FF.
   - Writing the adjustment data
     The PAUSE button must be pressed to write the adjustment data (F page) in the nonvolatile memory. (The new adjustment data will not be recorded in the nonvolatile memory if this step is not performed.)
4) Select page: 0, address: 01, and set the data to 01, and enables Page D and E,F to be adjusted.
5) After completing all adjustments, set data: 00 to page: 0, address: 01 and turn off the main power supply (8.4V) once.

| **Hexadecimal notation** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | B | C | D | E | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **LCD Display** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A | b | c | d | E | F |
| **Decimal notation conversion value** | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |

Table 6-1-1.

### 2. Precautions upon using the adjusting remote commander

Mishandling of the adjusting remote commander may erase the correct adjustment data at times. To prevent this, it is recommended that all adjustment data be noted down before beginning adjustments and new adjustment data after each adjustment.

### 1-1-5. Page F Addrress

**Note 1:** The ← mark shown in the adjustment data memory column indicates that the address data is fixed and is the same as the initial value.

**Note 2:** The initial adjustment data value is the value after "Page F, Page E Data Initialization" and "Page F Data Modification" have been executed. It is different from the value after all adjustments have been executed.

**Note 3:** ( ): AEP, UK model (TYPE A/C)
[ ]: E, Australian, Hong Kong model (TYPE B/D)

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 00 | B0 | B0 | B0 | |
| 01 | | | | |
| 02 | (02)[04] | 04 | 02 | |
| 03 | | | | |
| 04 | | | | |
| 05 | 9F | 9F | 9F | |
| 06 | B8 | B8 | B8 | |
| 07 | 5E | 5E | 5E | |
| 08 | 3E | 3E | 3E | |
| 09 | 53 | 53 | 53 | |
| 0A | 69 | 69 | 69 | |
| 0B | 93 | 93 | 93 | |
| 0C | | | | |
| 0D | | | | |
| 0E | | | | |
| 0F | | | | |
| 10 | 00 | 00 | 00 | |
| 11 | 00 | 00 | 00 | |
| 12 | 00 | 00 | 00 | |
| 13 | 00 | 00 | 00 | |
| 14 | 00 | 00 | 00 | |
| 15 | 00 | 00 | 00 | |
| 16 | 00 | 00 | 00 | |
| 17 | 00 | 00 | 00 | |
| 18 | 00 | 00 | 00 | |
| 19 | 00 | 00 | 00 | |
| 1A | 00 | 00 | 00 | |
| 1B | 00 | 00 | 00 | |
| 1C | F3 | 73 | 53 | ← |
| 1D | 04 | 04 | 04 | ← |
| 1E | 21 | 21 | 21 | ← |
| 1F | 32 | 32 | 32 | ← |
| 20 | 02 | 02 | 02 | ← |
| 21 | 46 | 46 | 46 | ← |
| 22 | 3B | 3B | 3B | |
| 23 | 00 | 00 | 00 | ← |

Table 6-1-2 (1).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 24 | 7C | 7C | 7C | ← |
| 25 | 80 | 80 | 80 | ← |
| 26 | 1F | 1F | 1F | ← |
| 27 | (40)[41] | 41 | 40 | ← |
| 28 | 46 | 46 | 46 | ← |
| 29 | 00 | 00 | 00 | |
| 2A | FE | FE | FE | |
| 2B | 3B | 3B | 3B | |
| 2C | 77 | 77 | 77 | |
| 2D | 56 | 56 | 56 | |
| 2E | 18 | 18 | 18 | |
| 2F | 1B | 1B | 1B | |
| 30 | C8 | C8 | C8 | |
| 31 | 24 | 24 | 24 | |
| 32 | E3 | E3 | E3 | |
| 33 | 15 | 15 | 15 | |
| 34 | 00 | 00 | 00 | |
| 35 | 00 | 00 | 00 | |
| 36 | 00 | 00 | 00 | |
| 37 | 0A | 0A | 0A | |
| 38 | 80 | 80 | 80 | |
| 39 | 80 | 80 | 80 | |
| 3A | A0 | A0 | A0 | |
| 3B | 65 | 65 | 65 | |
| 3C | 65 | 65 | 65 | |
| 3D | 30 | 30 | 30 | |
| 3E | 1B | 1B | 1B | |
| 3F | 1B | 1B | 1B | |
| 40 | AE | AE | AE | |
| 41 | 42 | 42 | 42 | |
| 42 | 44 | 44 | 44 | |
| 43 | 34 | 34 | 34 | |
| 44 | 2A | 2A | 2A | |
| 45 | 89 | 89 | 89 | |
| 46 | 59 | 59 | 59 | |
| 47 | 38 | 38 | 38 | |
| 48 | 41 | 41 | 41 | |
| 49 | 2D | 2D | 2D | |
| 4A | 00 | 00 | 00 | |
| 4B | 00 | 00 | 00 | |
| 4C | 00 | 00 | 00 | |
| 4D | 0A | 0A | 0A | |
| 4E | 00 | 00 | 00 | |
| 4F | 00 | 00 | 00 | |

Table 6-1-2 (2).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 50 | 00 | 00 | 00 | |
| 51 | 00 | 00 | 00 | |
| 52 | 80 | 80 | 80 | |
| 53 | 80 | 80 | 80 | |
| 54 | 20 | 20 | 20 | |
| 55 | 20 | 20 | 20 | |
| 56 | 00 | 00 | 00 | ← |
| 57 | 00 | 00 | 00 | ← |
| 58 | 00 | 00 | 00 | ← |
| 59 | BB | BB | BB | ← |
| 5A | C8 | C8 | C8 | ← |
| 5B | CA | CA | CA | ← |
| 5C | 3C | 3C | 3C | |
| 5D | 00 | 00 | 00 | ← |
| 5E | 7A | 7A | 7A | |
| 5F | 8D | 8D | 8D | |
| 60 | 7A | 7A | 7A | |
| 61 | 3A | 3A | 3A | ← |
| 62 | B0 | B0 | B0 | |
| 63 | 00 | 00 | 00 | |
| 64 | AA | AA | AA | |
| 65 | 30 | 30 | 30 | ← |
| 66 | 60 | 60 | 60 | |
| 67 | 7C | 7C | 7C | |
| 68 | 60 | 60 | 60 | ← |
| 69 | 40 | 40 | 40 | ← |
| 6A | 20 | 20 | 20 | ← |
| 6B | F8 | F8 | F8 | ← |
| 6C | 80 | 80 | 80 | ← |
| 6D | 15 | 15 | 15 | ← |
| 6E | 47 | 47 | 47 | ← |
| 6F | 20 | 20 | 20 | ← |
| 70 | 70 | 70 | 70 | |
| 71 | 70 | 70 | 70 | |
| 72 | 70 | 70 | 70 | |
| 73 | 70 | 70 | 70 | |
| 74 | 6B | 6B | 6B | |
| 75 | 78 | 78 | 78 | |
| 76 | B8 | B8 | B8 | |
| 77 | B8 | B8 | B8 | |
| 78 | B8 | B8 | B8 | |
| 79 | B8 | B8 | B8 | |
| 7A | 7E | 7E | 7E | |
| 7B | 7E | 7E | 7E | |

Table 6-1-2 (3).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 7C | 7E | 7E | 7E | |
| 7D | 7E | 7E | 7E | |
| 7E | 98 | 98 | 98 | |
| 7F | 80 | 80 | 80 | |
| 80 | D4 | D4 | D4 | ← |
| 81 | 80 | 80 | 80 | ← |
| 82 | 0C | 0C | 0C | ← |
| 83 | 01 | 01 | 01 | ← |
| 84 | 77 | 77 | 77 | ← |
| 85 | 30 | 30 | 30 | ← |
| 86 | 75 | 75 | 75 | ← |
| 87 | 83 | 83 | 83 | ← |
| 88 | 12 | 12 | 12 | ← |
| 89 | BB | BB | BB | ← |
| 8A | A5 | A5 | A5 | ← |
| 8B | 68 | 68 | 68 | ← |
| 8C | 4A | 4A | 4A | ← |
| 8D | F0 | F0 | F0 | ← |
| 8E | 00 | 00 | 00 | ← |
| 8F | 01 | 01 | 01 | ← |
| 90 | 28 | 28 | 28 | ← |
| 91 | 60 | 60 | 60 | ← |
| 92 | 40 | 40 | 40 | ← |
| 93 | 29 | 29 | 29 | ← |
| 94 | 28 | 28 | 28 | ← |
| 95 | 70 | 70 | 70 | ← |
| 96 | 40 | 40 | 40 | ← |
| 97 | 25 | 25 | 25 | ← |
| 98 | 28 | 28 | 28 | ← |
| 99 | 80 | 80 | 80 | ← |
| 9A | 40 | 40 | 40 | ← |
| 9B | 10 | 10 | 10 | ← |
| 9C | 28 | 28 | 28 | ← |
| 9D | FF | FF | FF | ← |
| 9E | 40 | 40 | 40 | ← |
| 9F | 10 | 10 | 10 | ← |
| A0 | 28 | 28 | 28 | ← |
| A1 | 70 | 70 | 70 | ← |
| A2 | 30 | 30 | 30 | ← |
| A3 | 00 | 00 | 00 | ← |
| A4 | 28 | 28 | 28 | ← |
| A5 | E0 | E0 | E0 | ← |
| A6 | 30 | 30 | 30 | ← |
| A7 | 00 | 00 | 00 | ← |

Table 6-1-2 (4).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| A8 | 60 | 60 | 60 | ← |
| A9 | 91 | 91 | 91 | ← |
| AA | 70 | 70 | 70 | ← |
| AB | 92 | 92 | 92 | ← |
| AC | 70 | 70 | 70 | ← |
| AD | A2 | A2 | A2 | ← |
| AE | 70 | 70 | 70 | ← |
| AF | A3 | A3 | A3 | ← |
| B0 | 04 | 04 | 04 | ← |
| B1 | D5 | D5 | D5 | ← |
| B2 | 04 | 04 | 04 | ← |
| B3 | D6 | D6 | D6 | ← |
| B4 | 40 | 40 | 40 | ← |
| B5 | 00 | 00 | 00 | ← |
| B6 | B3 | B3 | B3 | ← |
| B7 | B3 | B3 | B3 | ← |
| B8 | 10 | 10 | 10 | ← |
| B9 | 01 | 01 | 01 | ← |
| BA | 10 | 10 | 10 | ← |
| BB | 03 | 03 | 03 | ← |
| BC | 40 | 40 | 40 | ← |
| BD | 32 | 32 | 32 | ← |
| BE | 00 | 00 | 00 | ← |
| BF | 00 | 00 | 00 | ← |
| C0 | 22 | 22 | 22 | ← |
| C1 | 80 | 80 | 80 | ← |
| C2 | 22 | 22 | 22 | ← |
| C3 | 20 | 20 | 20 | ← |
| C4 | 40 | 40 | 40 | ← |
| C5 | 00 | 00 | 00 | ← |
| C6 | 40 | 40 | 40 | ← |
| C7 | 00 | 00 | 00 | ← |
| C8 | 00 | 00 | 00 | ← |
| C9 | 27 | 27 | 27 | ← |
| CA | CA | CA | CA | ← |
| CB | 00 | 00 | 00 | ← |
| CC | 50 | 50 | 50 | ← |
| CD | C4 | C4 | C4 | ← |
| CE | 1B | 1B | 1B | ← |
| CF | E0 | E0 | E0 | ← |
| D0 | A0 | A0 | A0 | ← |
| D1 | 28 | 28 | 28 | ← |
| D2 | 1A | 1A | 1A | ← |
| D3 | C0 | C0 | C0 | ← |

Table 6-1-2 (5).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| D4 | 6A | 6A | 6A | ← |
| D5 | 40 | 40 | 40 | ← |
| D6 | 60 | 60 | 60 | ← |
| D7 | 55 | 55 | 55 | ← |
| D8 | 66 | 66 | 66 | ← |
| D9 | 26 | 26 | 26 | ← |
| DA | 34 | 34 | 34 | ← |
| DB | 3F | 3F | 3F | ← |
| DC | 00 | 00 | 00 | ← |
| DD | 00 | 00 | 00 | ← |
| DE | 80 | 80 | 80 | ← |
| DF | 00 | 00 | 00 | |
| E0 | F5 | F5 | F5 | |
| E1 | 1A | 1A | 1A | |
| E2 | 33 | 33 | 33 | |
| E3 | FE | FE | FE | |
| E4 | 3C | 3C | 3C | |
| E5 | 24 | 24 | 24 | |
| E6 | 83 | 83 | 83 | |
| E7 | A0 | A0 | A0 | |
| E8 | 67 | 67 | 67 | |
| E9 | 4D | 4D | 4D | |
| EA | 33 | 33 | 33 | |
| EB | 5C | 5C | 5C | |
| EC | 5C | 5C | 5C | |
| ED | 5C | 5C | 5C | |
| EE | 3C | 3C | 3C | |
| EF | 0F | 0F | 0F | |
| F0 | 10 | 10 | 10 | |
| F1 | 2C | 2C | 2C | |
| F2 | 0A | 0A | 0A | |
| F3 | 36 | 36 | 36 | |
| F4 | 72 | 72 | 72 | |
| F5 | 46 | 46 | 46 | |
| F6 | E0 | E0 | E0 | |
| F7 | 50 | 50 | 50 | |
| F8 | 3B | 3B | 3B | |
| F9 | 10 | 10 | 10 | |
| FA | E8 | E8 | E8 | |
| FB | 90 | 90 | 90 | |
| FC | 00 | 00 | 00 | |
| FD | 02 | 02 | 02 | |
| FE | F3 | F3 | F3 | |
| FF | 81 | 81 | 81 | |

Table 6-1-2 (6).

### 1-1-6. Page E Addrress

**Note 1:** The ← mark shown in the adjustment data memory column indicates that the address data is fixed and is the same as the initial value.

**Note 2:** The initial adjustment data value is the value after "Page F, Page E Data Initialization" and "Page E Data Modification" have been executed. It is different from the value after all adjustments have been executed.

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 00 | 5B | 5B | 5B | ← |
| 01 | 89 | 89 | 89 | ← |
| 02 | 14 | 14 | 14 | ← |
| 03 | 4E | 4E | 4E | ← |
| 04 | 5B | 5B | 5B | ← |
| 05 | 64 | 64 | 64 | ← |
| 06 | 93 | 93 | 93 | ← |
| 07 | AA | AA | AA | ← |
| 08 | 61 | 61 | 61 | ← |
| 09 | 44 | 44 | 44 | ← |
| 0A | C2 | C2 | C2 | ← |
| 0B | 92 | 92 | 92 | ← |
| 0C | A6 | A6 | A6 | ← |
| 0D | 6D | 6D | 6D | ← |
| 0E | 61 | 61 | 61 | ← |
| 0F | 33 | 33 | 33 | ← |
| 10 | 05 | 05 | 05 | ← |
| 11 | F3 | F3 | F3 | ← |
| 12 | FF | FF | FF | ← |
| 13 | AD | AD | AD | ← |
| 14 | C6 | C6 | C6 | ← |
| 15 | 40 | 40 | 40 | ← |
| 16 | 2D | 2D | 2D | ← |
| 17 | F8 | F8 | F8 | ← |
| 18 | 00 | 00 | 00 | ← |
| 19 | 00 | 00 | 00 | ← |
| 1A | 00 | 00 | 00 | ← |
| 1B | 00 | 00 | 00 | ← |
| 1C | EE | EE | EE | ← |
| 1D | ED | ED | ED | ← |
| 1E | FE | FE | FE | ← |
| 1F | 00 | 00 | 00 | ← |
| 20 | 00 | 00 | 00 | ← |
| 21 | 00 | 00 | 00 | ← |
| 22 | 00 | 00 | 00 | ← |
| 23 | 00 | 00 | 00 | ← |
| 24 | 00 | 00 | 00 | ← |
| 25 | 00 | 00 | 00 | ← |

Table 6-1-3 (1).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 26 | 08 | 08 | 08 | ← |
| 27 | 28 | 28 | 28 | ← |
| 28 | 40 | 40 | 40 | ← |
| 29 | 03 | 03 | 03 | ← |
| 2A | 08 | 08 | 08 | ← |
| 2B | 08 | 08 | 08 | ← |
| 2C | FF | FF | FF | ← |
| 2D | 6A | 6A | 6A | ← |
| 2E | 25 | 25 | 25 | ← |
| 2F | 79 | 79 | 79 | ← |
| 30 | 0A | 0A | 0A | ← |
| 31 | 05 | 05 | 05 | ← |
| 32 | 30 | 30 | 30 | ← |
| 33 | 40 | 40 | 40 | ← |
| 34 | 08 | 08 | 08 | ← |
| 35 | 08 | 08 | 08 | ← |
| 36 | 20 | 20 | 20 | ← |
| 37 | 40 | 40 | 40 | ← |
| 38 | 30 | 30 | 30 | ← |
| 39 | 50 | 50 | 50 | ← |
| 3A | 2A | 2A | 2A | ← |
| 3B | 4A | 4A | 4A | ← |
| 3C | 20 | 20 | 20 | ← |
| 3D | 25 | 25 | 25 | ← |
| 3E | 0A | 0A | 0A | ← |
| 3F | 07 | 07 | 07 | ← |
| 40 | 20 | 20 | 20 | ← |
| 41 | 00 | 00 | 00 | ← |
| 42 | 40 | 40 | 40 | ← |
| 43 | 1E | 1E | 1E | ← |
| 44 | 00 | 00 | 00 | ← |
| 45 | F8 | F8 | F8 | ← |
| 46 | 22 | 22 | 22 | ← |
| 47 | 10 | 10 | 10 | ← |
| 48 | 08 | 08 | 08 | ← |
| 49 | 04 | 04 | 04 | ← |
| 4A | 6C | 6C | 6C | ← |
| 4B | 00 | 00 | 00 | ← |
| 4C | 8D | 8D | 8D | ← |
| 4D | 41 | 41 | 41 | ← |
| 4E | 08 | 08 | 08 | ← |
| 4F | 02 | 02 | 02 | ← |
| 50 | F8 | F8 | F8 | ← |
| 51 | F8 | F8 | F8 | ← |

Table 6-1-3 (2).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 52 | 9C | 9C | 9C | ← |
| 53 | 8E | 8E | 8E | ← |
| 54 | 74 | 74 | 74 | ← |
| 55 | 5F | 5F | 5F | ← |
| 56 | 4A | 4A | 4A | ← |
| 57 | 3F | 3F | 3F | ← |
| 58 | 2F | 2F | 2F | ← |
| 59 | 10 | 10 | 10 | ← |
| 5A | 00 | 00 | 00 | ← |

**Table 6-1-3 (3).**

### 1-1-7. Data Processing

The calculation of the DDS display and the adjusting remote commander display data (hexadecimal notation) are required for obtaining the adjustment data of some adjustment items. In this case, after converting the hexadecimal notation to decimal notation, calculate and convert the result to hexadecimal notation, and use it as the adjustment data. Table 6-1-4. indicates the hexadecimal notation-the decimal notation calculation table.

**Hexadecimal notation-Decimal notation**

| The lower digits of the hexadecimal notation<br>The upper digits of the hexadecimal notation | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A (A) | B (b) | C (c) | ②↓<br>D (d) | E (E) | F (F) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 1 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 |
| 2 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 |
| 3 | 48 | 49 | 50 | 51 | 52 | 53 | 54 | 55 | 56 | 57 | 58 | 59 | 60 | 61 | 62 | 63 |
| 4 | 64 | 65 | 66 | 67 | 68 | 69 | 70 | 71 | 72 | 73 | 74 | 75 | 76 | 77 | 78 | 79 |
| 5 | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 |
| 6 | 96 | 97 | 98 | 99 | 100 | 101 | 102 | 103 | 104 | 105 | 106 | 107 | 108 | 109 | 110 | 111 |
| 7 | 112 | 113 | 114 | 115 | 116 | 117 | 118 | 119 | 120 | 121 | 122 | 123 | 124 | 125 | 126 | 127 |
| 8 | 128 | 129 | 130 | 131 | 132 | 133 | 134 | 135 | 136 | 137 | 138 | 139 | 140 | 141 | 142 | 143 |
| 9 | 144 | 145 | 146 | 147 | 148 | 149 | 150 | 151 | 152 | 153 | 154 | 155 | 156 | 157 | 158 | 159 |
| A (A) | 160 | 161 | 162 | 163 | 164 | 165 | 166 | 167 | 168 | 169 | 170 | 171 | 172 | 173 | 174 | 175 |
| ①→ B (b) | 176 | 177 | 178 | 179 | 180 | 181 | 182 | 183 | 184 | 185 | 186 | 187 | 188 | 189 | 190 | 191 |
| C (c) | 192 | 193 | 194 | 195 | 196 | 197 | 198 | 199 | 200 | 201 | 202 | 203 | 204 | 205 | 206 | 207 |
| D (d) | 208 | 209 | 210 | 211 | 212 | 213 | 214 | 215 | 216 | 217 | 218 | 219 | 220 | 221 | 222 | 223 |
| E (E) | 224 | 225 | 226 | 227 | 228 | 229 | 230 | 231 | 232 | 233 | 234 | 235 | 236 | 237 | 238 | 239 |
| F (F) | 240 | 241 | 242 | 243 | 244 | 245 | 246 | 247 | 248 | 249 | 250 | 251 | 252 | 253 | 254 | 255 |

**Note:** ( ) indicate the adjusting remote control unit display.

**(Example)** In the case that the DDS display and the adjusting remote control unit display are BD (bd).
As the upper digit of the hexadecimal notation is B (b), and the lower digit is D (d), the intersection “189” of the ① and ② in the above table is the decimal notation to be calculated.

**Table 6-1-4.**

## 1-2. CAMERA SYSTEM ADJUSTMENTS

### 1. Initialization of E, F Page Data

**Note 1:** If the E, and F page data has been initialized, the "Modification of F Page Data", and "Modification of E Page Data", "Camera System Adjustments", "Servo System Adjustments", "Video System Adjustments", and "Audio System Adjustments" need to be performed again.

**Note 2:** Don't disconnect the VP-45 board.

Initializing method:

| | |
|---|---|
| Adjusting page | E |
| Adjusting address | 00 to 5A |
| Adjusting page | F |
| Adjusting address | 10 to FF |

1) Set data: 01 to page: 0, address: 01.
2) Set data: 2D to page: 2, address: 00.
3) Set data: 2D to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Check that the data of page: 2, address: 02 is 01.
5) Set data: 00 to page: 0, address: 01.
6) After performing "Modification of E, F Page Data", perform "Camera System Adjustments", "Servo System Adjustments", "Video System Adjustments", and "Audio System Adjustments".

### 2. Modification of F Page Data

If the E and F page data has been initialized, change the data as shown in the table on the right by manual input.

**Note 1:** Before changing the data, set data: 80 to page: 0, address: 01.

**Note 2:** To write in the non-volatile memory (EEPROM) after changing the data, press the PAUSE button of the adjusting remote commander each time to set the new data.

**Note 3:** After changing the data, set data: 00 to page: 0, address: 01. Also perform "Camera System Adjustments", "Servo System Adjustments", "Video System Adjustments", and "Audio System Adjustments".

**Note 4:** Don't disconnect the VP-45 board.

**Note 5:** ( ): AEP, UK model (TYPE A/C)
[ ]: E, Australian, Hong Kong model (TYPE B/D)

| Address | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 |
|---|---|---|---|
| 00 | B0 | B0 | B0 |
| 02 | (02)[04] | 04 | 02 |
| 05 | 9F | 9F | 9F |
| 06 | B8 | B8 | B8 |
| 07 | 5E | 5E | 5E |
| 08 | 3E | 3E | 3E |
| 09 | 53 | 53 | 53 |
| 0A | 69 | 69 | 69 |
| 0B | 93 | 93 | 93 |
| 1C | F3 | 73 | 53 |

| Address | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 |
|---|---|---|---|
| 1D | 04 | 04 | 04 |
| 27 | (40)[41] | 41 | 40 |
| 28 | 46 | 46 | 46 |
| 5A | C8 | C8 | C8 |
| 5B | CA | CA | CA |
| 61 | 3A | 3A | 3A |
| 69 | 40 | 40 | 40 |
| 74 | 6B | 6B | 6B |
| 75 | 78 | 78 | 78 |
| 7E | 98 | 98 | 98 |
| 7F | 80 | 80 | 80 |
| 80 | D4 | D4 | D4 |
| 85 | 30 | 30 | 30 |
| 89 | BB | BB | BB |
| 91 | 60 | 60 | 60 |
| 93 | 29 | 29 | 29 |
| 95 | 70 | 70 | 70 |
| 97 | 25 | 25 | 25 |
| 99 | 80 | 80 | 80 |
| 9B | 10 | 10 | 10 |
| 9D | FF | FF | FF |
| 9F | 10 | 10 | 10 |
| A1 | 70 | 70 | 70 |
| A3 | 00 | 00 | 00 |
| A5 | E0 | E0 | E0 |
| A7 | 00 | 00 | 00 |
| A9 | 91 | 91 | 91 |
| AA | 70 | 70 | 70 |
| AB | 92 | 92 | 92 |
| AC | 70 | 70 | 70 |
| AD | A2 | A2 | A2 |
| AE | 70 | 70 | 70 |
| AF | A3 | A3 | A3 |
| B1 | D5 | D5 | D5 |
| B3 | D6 | D6 | D6 |
| B4 | 40 | 40 | 40 |
| CF | E0 | E0 | E0 |
| D2 | 1A | 1A | 1A |
| D5 | 40 | 40 | 40 |
| D6 | 60 | 60 | 60 |
| DC | 00 | 00 | 00 |
| DF | 00 | 00 | 00 |
| E0 | F5 | F5 | F5 |
| E1 | 1A | 1A | 1A |
| E2 | 33 | 33 | 33 |
| F9 | 10 | 10 | 10 |
| FD | 02 | 02 | 02 |

### 3. Modification of E Page Data

If the E and F page data has been initialized, change the data as shown in the following table by manual input.

**Note 1:** Before changing the data, set data: 01 to page: 0, address: 01.

**Note 2:** To write in the non-volatile memory (EEPROM) after changing the data, press the PAUSE button of the adjusting remote commander each time to set the new data.

**Note 3:** After changing the data, set data: 00 to page: 0, address: 01. Also perform "Camera System Adjustments", "Servo System Adjustments", "Video System Adjustments", and "Audio System Adjustments".

**Note 4:** Don't disconnect the VP-45 board.

| **Address** | **CCD-TR3300E** | **CCD-TR2300E** | **CCD-TR2200E, CC 886** |
|---|---|---|---|
| 08 | 61 | 61 | 61 |
| 12 | FF | FF | FF |
| 13 | AD | AD | AD |
| 14 | C6 | C6 | C6 |
| 15 | 40 | 40 | 40 |
| 1C | EE | EE | EE |
| 1D | ED | ED | ED |
| 1E | FE | FE | FE |
| 2A | 08 | 08 | 08 |
| 2B | 08 | 08 | 08 |
| 36 | 20 | 20 | 20 |
| 37 | 40 | 40 | 40 |
| 38 | 30 | 30 | 30 |
| 39 | 50 | 50 | 50 |
| 3B | 4A | 4A | 4A |
| 3D | 25 | 25 | 25 |
| 40 | 20 | 20 | 20 |
| 41 | 00 | 00 | 00 |
| 4C | 8D | 8D | 8D |
| 50 | F8 | F8 | F8 |
| 51 | F8 | F8 | F8 |

### 4. HALL Adjustment

For detecting the position of the lens iris, adjust the hall AMP gain and hall offset.

| | |
|---|---|
| Subject | Not required |
| Measurement Point | DDS display of EVF or monitor TV |
| Measuring Instrument | |
| Adjustment Page | F |
| Adjustment Address | 3B, 3C |
| Specified Value | 13 to 17 during IRIS OPEN (Note 1) |
| | 7F to 83 during IRIS CLOSE (Note 2) |

**Note 1:** Set data: 01 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.

**Note 2:** Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 03 to page: 0, address: 03.
3) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Set data: 80 to page: F, address: 3C, and press the PAUSE button of the adjusting remote commander.
6) Set data: 40 to page: F, address: 3B, and press the PAUSE button of the adjusting remote commander.
7) Read the DDS display data (the bottom two digits of the display data at the bottom right of the EVF or the monitor TV display), and this data is named $W_2$.
8) Set data: 30 to page: F, address: 3B, and press the PAUSE button of the adjusting remote commander.
9) Read the DDS display data, and this data is named $W_1$.
10) Set data: 01 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
11) Read the DDS display data, and this data is named $K_1$.
12) Set data: 40 to page: F, address: 3B, and press the PAUSE button.
13) Read the DDS display data, and this data is named $K_2$.
14) Convert $W_1$, $W_2$, $K_1$, $K_2$ to decimal notation, and obtain $W_1'$, $W_2'$, $K_1'$, $K_2'$. (Refer to Table 6-1-4. "Hexadecimal notation-decimal notation conversion table".)
15) Calculate $X_1'$ using the following equations (decimal notation calculation).

    $A' = W_2' + K_1' - W_1' - K_2'$ .......................... Equation 1

    $B' = W_1' - K_1'$ .................................................. Equation 2

    $X_1' = \dfrac{1728 + (48 \times A') - (16 \times B')}{A'}$ ............... Equation 3

16) Convert $X_1'$ to hexadecimal notation, and obtain $X_1$. (Round off to one decimal place)
17) Set data: $X_1$ to page: F, address: 3B, and press the PAUSE button of the adjusting remote commander.
18) Change the data of page: F, address: 3C, and adjust the DDS display data to "15".

19) Press the PAUSE button of the adjusting remote commander.
20) Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
21) Read the DDS display data, and this data is named $W_0$. If $W_0$ lies within the "7F" to "83" range, perform "Processing after completing adjustments". If it lies outside the range, perform the following adjustments.
22) Convert $W_0$ to decimal notation, and obtain $W_0'$.
23) Calculate $X_2'$ using the following equations (decimal notation calculation).

$$C' = W_0' - B' - 21 \text{ .......... Equation 4}$$

$$X_2' = \frac{(108 - B') \times (X_1' - 48) + 48 \times C'}{C'} \text{ ........ Equation 5}$$

($X_1'$ and $B'$ are values obtained from equations 2 and3)

24) Convert $X_2'$ to hexadecimal notation and obtain $X_2$. (Round off to one decimal place)
25) Set data $X_2$ to page: F, address: 3B, and press the PAUSE button of the adjusting remote commander.
26) Change the data of page: F, address: 3C, and adjust the DDS display data to "81".
27) Press the PAUSE button of the adjusting remote commander.
28) Set data: 01 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
29) Check that the DDS display data lies within the "13" to "17" range.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 0, address: 03.
4) Set data: 00 to page: 0, address: 01.

## 5. Flange Back Adjustment

The inner focus lens flange back adjustment is carried out automatically. If it is not adjusted correctly, it will be out of focus during auto focusing /manual focusing.

### 5-1. Flange Back Adjustment (1)

| | |
|---|---|
| Subject | Flange back adjustment chart<br>(2 m from the front of the protection glass)<br>(Luminance: 300 ± 50 lux) |
| Measurement Point | Check operations on TV monitor |
| Measuring Instrument | |
| Adjustment Page | F |
| Adjustment Address | 2E to 33, 49 to 4D |

Adjusting method:

1) Check that at both the zoom lens TELE terminal and WIDE terminal, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
2) Set data: 01 to page: 0, address: 01.
3) Check that the data of page: F, address: 2E to 33, 49 to 4D is the initial value (see table below).

| **Address** | **Data** | **Address** | **Data** |
|---|---|---|---|
| 2E | 18 | 33 | 15 |
| 2F | 1B | 49 | 25 |
| 30 | C8 | 4A | 00 |
| 31 | 24 | 4B | 19 |
| 32 | E3 | 4C | 00 |

4) Check that the data of page: 2, address: 02 is 00.
5) Set data: 13 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 27 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
(The adjustment data will be automatically input to page: F, address: 2E to 33, 49 to 4D.)
7) Check that the data of page: 2, address: 02 is "01".

Processing after Completing Adjustments

1) Turn OFF the main power supply (8.4V)
2) Perform "Flange Back Adjustment (2)".

## 5-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

| | |
|---|---|
| Subject | Subject more than 500m away (Subjects with clear contrast such as buildings, etc.) |
| Adjustment Page | F |
| Adjustment Address | 2E to 33, 49 to 4D |

Adjusting Method:

1) Set the IRIS to open. (Use a ND filter)
2) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subjects with clear contrast such as buildings, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
3) Set data: 01 to page: 0, address: 01.
4) Check that the data of page: 2, address: 02 is "00".
5) Set data: 13 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 27 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
   (Adjustment data will automatically be input to page: F, addresses: 2E to 33, 49 to 4D.)
7) Check that the data of page: 2, address: 02 is "01".

Processing after Completing Adjustments

1) Set data: 00 to page: 0, address: 01.
2) Turn OFF the main power supply (8.4V).
3) Perform "Flange Back Check".

## 6. Flange Back Check

| | |
|---|---|
| Subject | Siemens star<br>(2m from the front of the protection glass<br>Luminance: approx. 200 lux) |
| Measurement Point | Check the operation on the TV monitor |
| Measuring Instrument | |
| Specified Value | Focused at the TELE end and WIDE end. |

Checking method:

1) Place the Siemens star 2m from the front of the protection glass.
2) To open the IRIS, decrease the luminous intensity to the Siemens star up to a point before noise appears on the image.
3) Set data: 02 to page: 2, address: 40.
4) Set data: 01 to page: 2, address: 41.
5) Shoot the siemens star with the zoom TELE end.
6) Turn on the auto focus.
7) Check that the lens is focused (Note 1), and turn off the auto focus
8) Set data: 10 to page: 2, address: 21.
9) Shoot the siemens star with the zoom WIDE end.
10) Check that the lens is focused.

**Note 1:** When the auto focus is ON, the lens can be checked if it is focused or not by observing the data on page 1 of the adjusting remote commander.

1) Set data: 0F to page: 0, address: 03.
2) Page 1 shows the state of the focus.

1 : 00 : XX
→ Odd: Focused
Even: Unfocused

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 21.
2) Set data: 00 to page: 0, address: 03.
3) Set data: 00 to page: 2, address: 40.
4) Set data: 00 to page: 2, address: 41.

## 7. Picture Frame Setting

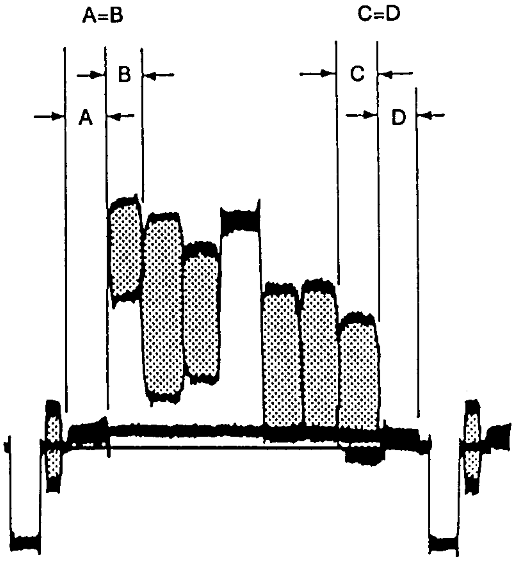
| | |
|---|---|
| Subject | Color bar chart standard picture frame (2m from the front of the lens) |
| Measurement Point | Video output terminal |
| Measuring Instrument | Oscilloscope and TV monitor. |
| Specified Value | A = B, C = D, t = 0 ± 0.1 msec |

Setting method:

1) Adjust the zoom and the camera direction, and set to the specified position.
2) Mark the position of the picture frame on the monitor display, and adjust the picture frame to this position in following adjustments using "color bar chart standard picture frame".

Check on the oscilloscope

1. horizontal period



2. Vertical period

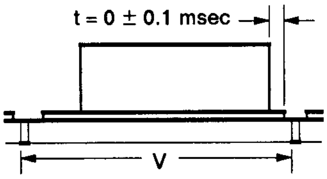


Fig. 6-1-7.

Check on the TV monitor

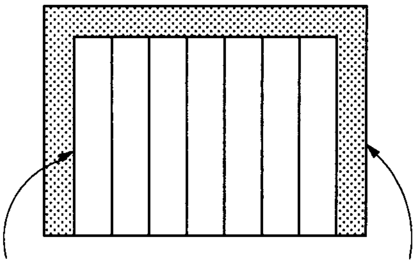

Color bar chart picture frame
TV monitor picture frame

Fig. 6-1-8.

## 8. Color Reproduction Adjustment

Adjust the color separation matrix coefficient so that the proper color reproduction is produced.

| | |
|---|---|
| Subject | Color bar chart standard picture frame |
| Measurement Point | Video output terminal |
| Measuring Instrument | Vectorscope |
| Adjustment Page | F |
| Adjustment Address | 3F, 41, DF, E0 |
| Specified Value | All color luminance points should settle within each color reproduction frame. |

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 3D to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 3F to page: F, address: 22, and press the PAUSE button of the adjusting remote commander.
4) Adjust the GAIN and PHASE of the vectorscope, and adjust the burst luminance point to the burst position of the color reproduction frame.
5) Change the data of addresses 3F, 41, DF and E0 of page: F, and settle each color luminance point in each color reproduction frame.

   **Note 1:** Be sure to press the PAUSE button of the adjusting remote commander before changing the addresses.
   If not, the new data will not be written to the memory.
6) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 01 and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 0, address: 01.

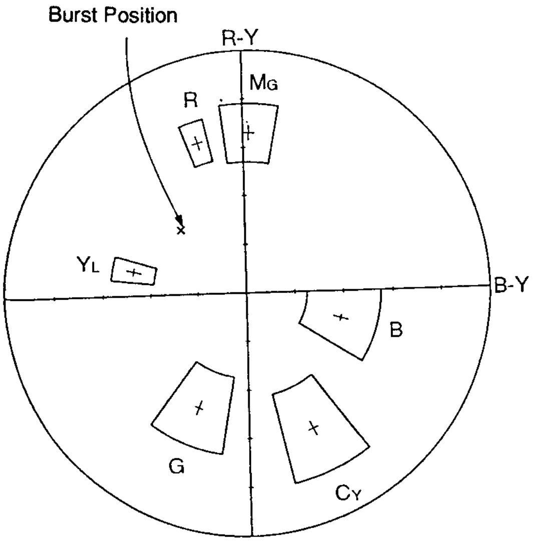


Fig. 6-1-9.

## 9. IRIS IN/OUT Adjustment

For the unit to judge if the white balance is indoors or outdoors in auto white balance operations, measure the light level and write it in the EEPROM.
If the level is not correct, the white balance will not be accurate.

| | |
|---|---|
| Subject | Clear chart<br>(Color bar standard picture frame) |
| Measurement Point | DDS display of EVF or TV monitor |
| Measuring Instrument | |
| Adjustment Page | F |
| Adjustment Address | 47, 48 |

Switch setting:

1) STEADY SHOT switch (S103 on CF block) ............ OFF

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 06 to page: 0, address: 03.
3) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 02 to page: 2, address: 40.
5) Set data: 0B to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Read the DDS display data (Note 1), and take the upper two digits as $D_1$ and the lower two as $D_2$.
7) Convert $D_1$ to a decimal number and obtain $D_1'$. (Refer to Table 6-1-4. "Hexadecimal Notation-Decimal Notation Conversion Table".)
8) Calculate $D_3'$ using the following equations. (Equations 1 and 2 are for decimal notation calculation)

   When $D_2 \geq$ D0

   $D_3' = D_1' - 21$ .................................. Equation 1

   When $D_2 <$ D0

   $D_3' = D_1' - 22$ .................................. Equation 2
9) Convert $D_3'$ to a hexadecimal number and obtain $D_3$.
10) Set $D_3$ to page: F, address: 47, and press the PAUSE button of the adjusting remote commander.
11) Set data: 09 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
12) Read the DDS display data (Note 1), and take the upper two digits as $D_4$ and the lower two as $D_5$.
13) Convert $D_4$ to a decimal number and obtain $D_4'$. (Refer to Table 6-1-4. "Hexadecimal Notation-Decimal Notation Conversion Table".)
14) Calculate $D_6'$ using the following equations. (Equations 3 and 4 are for decimal notation calculation)

    When $D_5 \geq$ F0

    $D_6' = D_4' - 13$ .................................. Equation 3

    When $D_5 <$ F0

    $D_6' = D_4' - 14$ .................................. Equation 4
15) Convert $D_6'$ to a hexadecimal number and obtain $D_6$.
16) Set $D_6$ to page: F, address: 48, and press the PAUSE button of the adjusting remote commander.

**Note 1:** The right four digits of the display data at the right bottom side of the EVF and monitor TV is the LIGHT LEVEL data. If the lower digits change severely and cannot be read, record it on a tape once, play it back by frame feeding, and obtain the average value.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 2, address: 40.
4) Set data: 00 to page: 0, address: 03.
5) Set data: 00 to page: 0, address: 01.

### 10. MAX GAIN Adjustment

Setting the minimum illumination.
If it is not consistent, the image level required for taking subjects in low illuminance will not be produced (dark).

| | |
|---|---|
| Subject | Clear chart<br>(Color bar standard picture frame) |
| Measurement Point | DDS display of EVF or TV monitor |
| Measuring Instrument | |
| Adjustment Page | F |
| Adjustment Address | 3D |
| Specified Value | 9B to A3 |

Switch setting:

1) STEADY SHOT switch (S103 on CF block) ............ OFF

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
3) Set data: 01 to page: 0, address: 03.
4) Set data: 02 to page: 2, address: 40.
5) Set data: 40 to page: 2, address: 56.
6) Set data: 19 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
7) Change the data of page: F, address: 3D and adjust so that the DDS display data (Note 1) lies within the specified value.
8) Press the PAUSE button of the adjusting remote commander.

**Note 1:** The right two digits of the display data at the right bottom side of the EVF and monitor TV is the object data. If the data change severely and cannot be read, record it on a tape once, play it back by frame feeding, and obtain the avarage value.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 2, address: 40.
4) Set data: 00 to page: 2, address: 56.
5) Set data: 00 to page: 0, address: 03.
6) Set data: 00 to page: 0, address: 01.

## 11. Auto White Balance Standard Data Input

| | |
|---|---|
| Subject | Clear chart<br>(Color bar standard picture frame) |
| Adjustment Page | F |
| Adjustment Address | 2A to 2D |

**Note 1:** Perform "Color Reproduction Adjustment" before this adjustment.

**Note 2:** Check that the data of page: 2, address: 02 is 00. If not, turn the power of the unit OFF/ON.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Wait for 2 seconds.
3) Set data: 11 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Set data: 0D to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander. (When the standard data is taken in, the data will be automatically input to addresses 2A to 2D of page F.)
5) Check that the data of page: 2, address: 02 is 01.
6) Perform "Auto White Balance Adjustment".

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 0, address: 01.

## 12. Auto White Balance Adjustment

Adjust to the proper auto white balance output data.
If it is not correct, auto white balance and color reproducibility will be poor.

| | |
|---|---|
| Subject | Clear chart<br>(Color bar standard picture frame) |
| Filter | Filter C14 for color temperature correction |
| Measurement Point | Check with the DDS display on the |
| Measuring Instrument | EVF or TV monitor |
| Adjustment Page | F |
| Adjustment Address | 45, 46 |
| Specified Value | R ratio: 2B40 to 2BC0<br>B ratio: 5E40 to 5EC0 |

Adjusting method:

1) Place the C14 filter for color temperature correction on the lens.
2) Set data: 01 to page: 0, address: 01.
3) Set data: 21 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 3F to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Set data: 04 to page: 0, address: 03.
6) Change the data of page: F, address: 45, and adjust the average value of the DDS display data (the display data at the bottom right of the EVF or the TV monitor) to the R ratio specified value.
7) Press the PAUSE button of the adjusting remote commander.
8) Set data: 05 to page: 0, address: 03.
9) Change the data of page: F, address: 46, and adjust the average value of the DDS display data to the B ratio specified value.
10) Press the PAUSE button of the adjusting remote commander.

Processing after Completing Adjustments

1) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
2) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 0, address: 03.
4) Set data: 00 to page: 0, address: 01.

### 13. White Balance Check

| | |
|---|---|
| Subject | Clear chart<br>(Color bar standard picture frame) |
| Filter | Filter C14 for color temperature correction<br>ND filter 1.0 and 0.3 |
| Measurement Point | Video output terminal |
| Measuring Instrument | Vectorscope |
| Specified Value | Fig. 6-1-10. A to C |

Checking method:

1) Check that the lens is not covered with either filter.
2) Set data: 0F to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Check that the center of the white luminance point is within the circle shown in Fig. 6-1-10.A.
4) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
5) Set data: 23 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Place the C14 filter on the lens.
7) Check that the center of the white luminance point settles in the circle shown in Fig. 6-1-10. B.
8) Remove the C14 filter, and place the ND filter 1.3 (1.0+0.3) on the lens.
9) Check that the center of the white luminance point settles in the circle shown in Fig. 6-1-10. C.

Processing after Completing Adjustments

1) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.

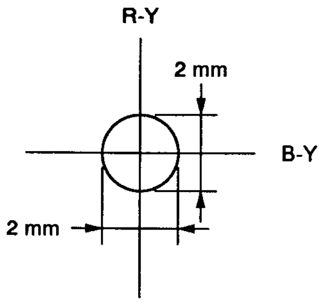


Fig. 6-1-10. A

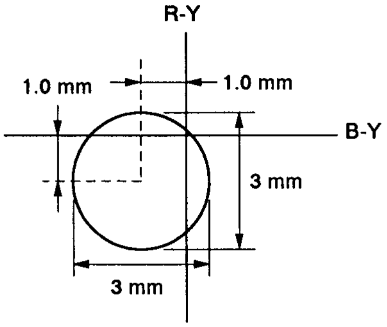


Fig. 6-1-10. B

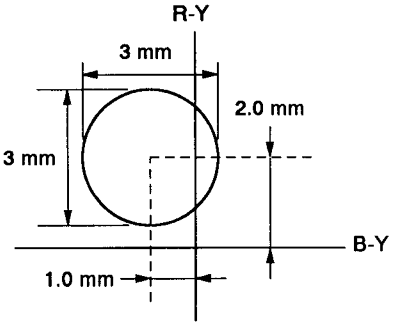


Fig. 6-1-10. C

## 14. Steady shot adjustment

- Perform the steady shot adjustment only when replacing the angular velocity sensor. When the microprocessor, circuit, etc. malfunctions, do not perform this adjustment but check operations only.
- Record the sensitivity label of the angular velocity sensor (repair part), including to which side of the board it was attached to, etc.

  If it has been attached incorrectly, the image will move up and down or to the left and right during steady shot operation. Be sure to take note of this.

### Note on Angular Velocity Sensor

The sensor contains a high precision oscillator. Therefore handle it with extreme care as dropping it, etc. will disturb the balance of the oscillator and result in incorrect operations.

### Switching Settings

1) Steady shot switch (CF block S103) .......................... ON
2) Digital zoom switch (Menu screen) .......................... OFF
3) When removing the cabinet (R), release the active prism lock. (Referring to the figure below, secure the lever with adhesive tape, etc.)

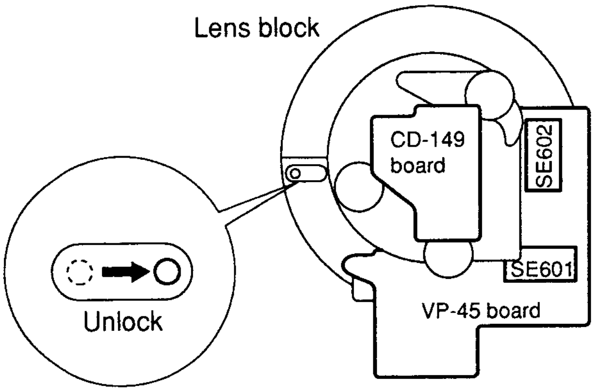
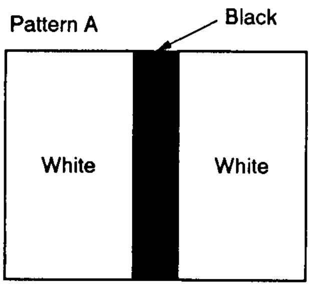


**Fig. 6-1-11.**

### 14-1. Steady Shot Adjustment (1)

| | |
|---|---|
| Subject | Pattern A |
| Measuring point | Video output terminal |
| Measuring device | Oscilloscope |
| Adjustment page | F |
| Adjustment address | 53 |



A4 size (297mm × 210mm)

**Fig. 6-1-12.**

Adjusting method:

1) Expose pattern A with the zoom TELE end.

   **Note:** Digital zoom (Menu screen) .......................... OFF
   Active prism lock
   (Refer to Fig. 6-1-11.) ...................... Release lock
2) Adjust the inclination of the camera so that the vertical black line comes to the center of the screen.
3) Set data: 01 to page: 0, address: 01.
4) Set data: 08 to page: E, address: 35, and press the PAUSE button of the adjusting remote commander.
5) Adjust to the falling edge of the waveform with vertical scale on the oscilloscope. (Oscilloscope is H period).
6) Set data: 07 to page: E, address: 35, and press the PAUSE button of the adjusting remote commander.

   At this time, measure the moving amount t1 (μsec) of the falling edge of the waveform.
7) Obtain D53′ using the following equation (decimal calculation).

$$D53' = \frac{5.81}{t1} \times \frac{1.01}{\text{SE602 sensor sensitivity}} \times 98$$

   **Note:** The SE602 sensor sensitivity of the VP-45 board is labeled only on the repair part.
8) Raise D53′ to a whole number, convert it to a hexadecimal digit and take this as D53. (Refer to Table 6-1-4. "Hexadecimal Digit-Decimal Digit Conversion Table".)
9) Set D53 to page F, address: 53, and press the PAUSE button of the adjusting remote commander.
10) Set data: 08 to page E, address: 35, and press the PAUSE button of the adjusting remote commander.

Procedure after adjustment

1) Set data: 00 to page: 0, address: 01.
2) Check that the steady shot operation is performed normally.

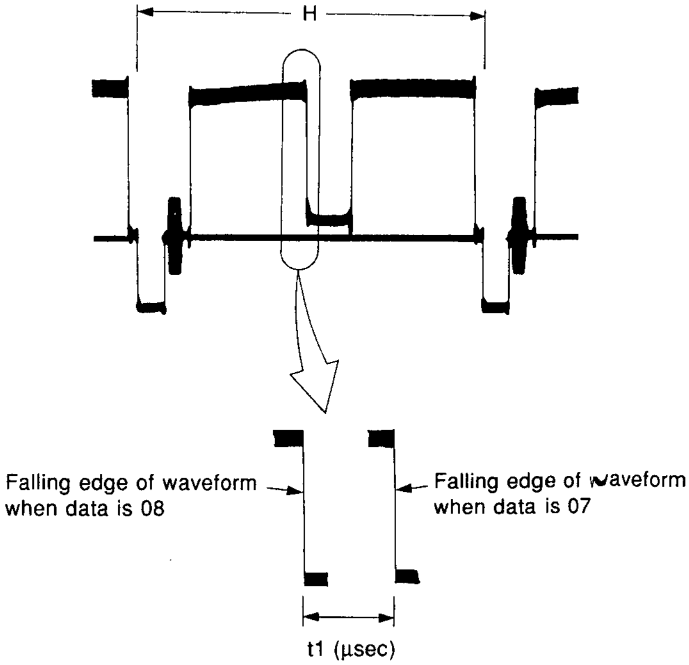
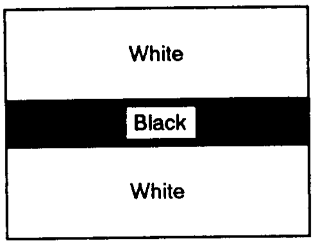

H
Falling edge of waveform when data is 08
Falling edge of waveform when data is 07
t1 (μsec)

**Fig. 6-1-13.**

### 14-2. Steady Shot Adjustment (2)

| | |
|---|---|
| Subject | Pattern B |
| Measuring point | Video output terminal |
| Measuring device | Oscilloscope |
| Adjustment page | F |
| Adjustment address | 52 |

Pattern B



A4 size (297mm × 210mm)

**Fig. 6-1-14.**

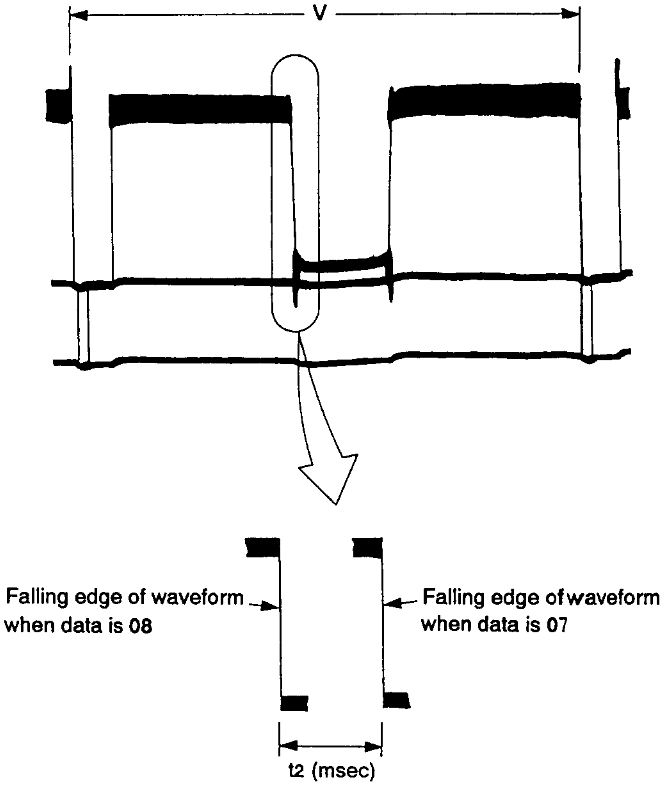

V
Falling edge of waveform when data is 08
Falling edge of waveform when data is 07
t2 (msec)

**Fig. 6-1-15.**

Adjusting method:

1) Expose pattern B with the zoom TELE end.
   **Note:** Digital zoom (Menu screen) .......................... OFF
   Active prism lock
   (Refer to Fig. 6-1-11.) ....................... Release lock
2) Adjust the inclination of the camera so that the horizontal black line comes to the center of the screen.
3) Set data: 01 to page: 0, address: 01.
4) Set data: 08 to page: E, address: 34, and press the PAUSE button of the adjusting remote commander.
5) Adjust the falling edge of the waveform with horizontal scale on the oscilloscope. (Oscilloscope is V period).
6) Set data: 07 to page: E, address: 34, and press the PAUSE button of the adjusting remote commander.
   At this time, measure the moving amount t2 (msec) of the falling edge of the waveform.
7) Obtain D52′ using the following equation (decimal calculation).

$$D_{52}' = \frac{2.52}{t2} \times \frac{1.00}{\text{SE601 sensor sensitivity}} \times 104$$

   **Note:** The SE601 sensor sensitivity of the VP-45 board is labeled only on the repair part.
8) Raise D52′ to a whole number, convert it to a hexadecimal digit and take this as D52. (Refer to Table 6-1-4. "Hexadecimal Digit-Decimal Digit Conversion Table".)
9) Set D52 to page F, address: 52, and press the PAUSE button of the adjusting remote commander.
10) Set data: 08 to page E, address: 34, and press the PAUSE button of the adjusting remote commander.

Procedure after adjustment

1) Set data: 00 to page: 0, address: 01.
2) Check that the steady shot operation is performed normally.

## 1-3. COLOR ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (COLOR EVF MODEL) (CCD-TR2300E/TR3300E)

**Note 1:** The backlight (fluorescent tube) is driven by a high voltage AC power supply.
Therefore, be careful not to touch the backlight holder as you will receive an electric shock.

**Note 2:** When replacing the LCD unit, ensure there will be no damages by static electricity.

**Note 3:** Set the VF PW-SAVE (Menu display) to "OFF" position, unless specified otherwise.

### [Adjusting connector]

Some measuring points for adjusting the view-finder are concentrated at CPC of the FP-379 flexible board. Connect the measuring equipments via CPC-5 jig (J-6082-351-A). The following table lists the pin numbers and signal names of CPC.

| Pin No. | Signal Name | Pin No. | Signal Name |
|---|---|---|---|
| 1 | LANC SIG | 2 | LANC DC |
| 3 | CAP FG | 4 | RF SWP |
| 5 | 1/2 SWP | 6 | REC RF |
| 7 | REG GND | 8 | PB PCM RF |
| 9 | PB RF | 10 | CHASSIS GND |
| 11 | RF AGC IN | 12 | AFC FO |
| 13 | EZ I/O | 14 | RF AGC OUT |
| 15 | REC AFM | 16 | BPF MON |
| 17 | EVF UNREG (–) | 18 | VCO |
| 19 | EVF UNREG | 20 | EVF VG |

Table 6-1-5.

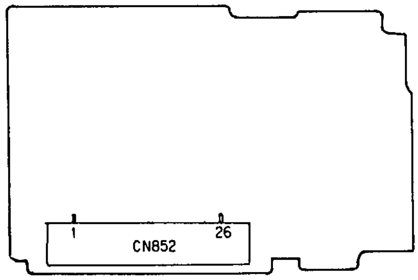
### [Power Supply Voltage]

Adjust the power supply voltage for the battery pin so that Pin ⑲ (EVF UNREG) of CPC of the FP-379 flexible board becomes 6.0 ± 0.1 Vdc.

### 1. Power Supply Voltage Check (VF-95 board)

| | |
|---|---|
| Mode | Record |
| Measuring Instrument | Digital voltmeter |
| 13.5V check | |
| Measurement Point | Pin ⑪ of CN852 |
| Specified Value | 13.5 ± 0.3 Vdc |
| 12.0V check | |
| Measurement Point | Pin ⑩ of CN852 |
| Specified Value | 12.0 ± 0.3 Vdc |

**VF-95 board (Component side)**



### 2. EVR Initial Data Input

| | |
|---|---|
| Mode | VTR STOP |
| Signal | Arbitrary |
| Adjustment Page | D |
| Adjustment Address | 40 to 51 |

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Select page D, and input the data in the following table.
**Note:** To write in the nonvolatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time the data is set.
3) Set data: 00 to page: 0, address: 01.

| Address | Data | Address | Data |
|---|---|---|---|
| 40 | 3D | 49 | A4 |
| 41 | 04 | 4A | BC |
| 42 | 20 | 4B | B4 |
| 43 | 20 | 4C | 93 |
| 44 | A2 | 4D | 93 |
| 45 | 00 | 4E | 78 |
| 46 | 94 | 4F | 80 |
| 47 | 48 | 50 | 50 |
| 48 | A4 | 51 | 40 |

### 3. VCO Adjustment (VF-96 board)

Set the VCO freerun frequency.
If deviated, the EVF screen will be blurred.

| | |
|---|---|
| Mode | VTR stop |
| Signal | Arbitrary |
| Measurement Point | Pin ⑱ of CPC of FP-379 flexible board (VCO) |
| Measuring Instrument | Oscilloscope (DC range) |
| Adjustment Page | D |
| Adjustment Address | 4F |
| Specified Value | A = 1.8 ± 0.1V |

Adjusting method:

1) Check the GND level of the oscilloscope.
2) Set data: 01 to page: 0, address: 01.
3) Change the data of page: D, address: 4F, and set the PCO output voltage (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.

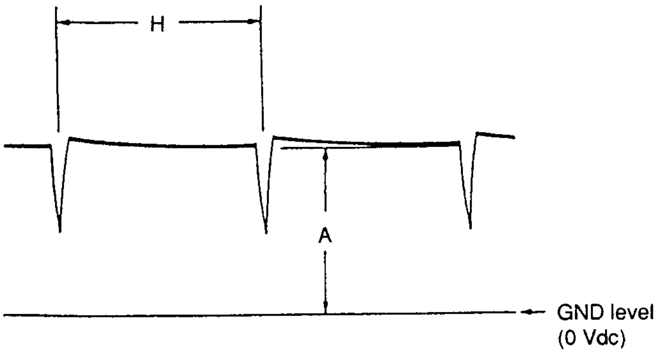


Fig. 6-1-16.

### 4. Bright Adjustment (VF-96 board)

Set the VIDEO signal level for driving the LCD to the appropriate value. If deviated, the LCD screen may become blackish or saturated (whitish).

| | |
|---|---|
| Mode | VTR stop |
| Signal | Arbitrary |
| Measurement Point | Pin ⑳ of CPC of FP-379 flexible board (EVF VG) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | D |
| Adjustment Address | 48 |
| Specified Value | A = 7.2 ± 0.15V |

Connection:

1) Connect a 3.3 kΩ between Pin ⑳ and Pin ⑦ of CPC (REG GND).

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, address: 40 to 45.
   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| **Address** | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| **Data** | 00 | 00 | 00 | 00 | 00 | 00 |

3) Change the data of page: D, address: 48, and set the voltage (A) between the reverse waveform pedestal and on-reverse waveform pedestal to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Input the following table in page: D, address: 40 to 45.
   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| **Address** | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| **Data** | 3D | 04 | 20 | A2 | 82 | 00 |

6) Set data: 00 to page: 0, address: 01.

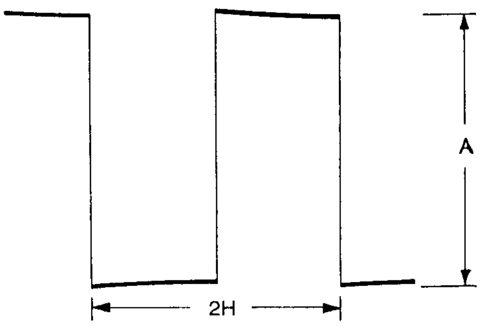


Fig. 6-1-17.

### 5. Contrast Adjustment (VF-96 board)

Set the level of the VIDEO signal for driving the LCD to the specified value. If deviated, the screen may become inconsistent or blackish/saturated (whitish).

| | |
|---|---|
| Mode | CAMERA mode |
| Signal | Arbitrary |
| Measurement Point | Pin ⑳ of CPC of FP-379 flexible board (EVF VG) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | D |
| Adjustment Address | 4B |
| Specified Value | A = 1.40 ± 0.1V |

Connection:

1) Connect a 3.3 kΩ between Pin ⑳ and Pin ⑦ of CPC (REG GND).

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, address: 40 to 45.
   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| **Address** | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| **Data** | 00 | 27 | 00 | 00 | 00 | 00 |

3) Change the --data of page: D, address: 4B, and set the voltage (A) between white 50% and the pedestal to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Input the following table in page: D, address: 40 to 45.
   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| **Address** | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| **Data** | 3D | 04 | 20 | 20 | A2 | 00 |

6) Set data: 00 to page: 0, address: 01.

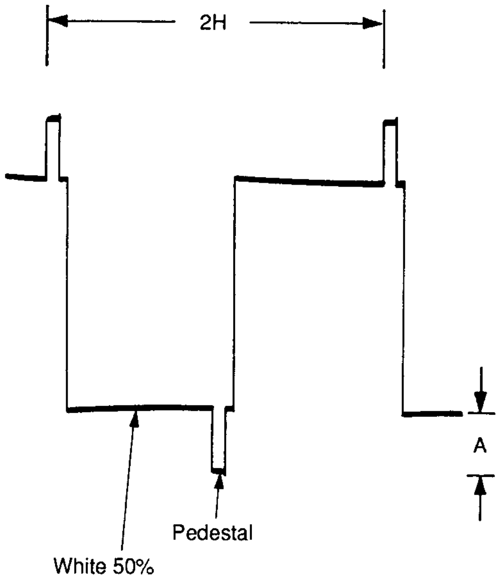


Fig. 6-1-18.

### 6. Backlight Consumption Current Adjustment (VF-95 board)

Set the back light luminance and color temperature.
If deviated, the image may becomes too dark or bright.

| | |
|---|---|
| Mode | VTR stop |
| Signal | Arbitrary |
| Measurement Point | + Probe: Pin ⑲ of CPC of FP-379 flexible board (EVF UNREG)<br>– Probe: Pin ⑰ of CPC of FP-379 flexible board (EVF UNREG (–) |
| Measuring Instrument | Digital voltmeter |
| Adjustment Page | D |
| Adjustment Address | 50 |
| Specified Value | A = 30.0 ± 1.0 mVdc |

**Note:** Adjust 30 seconds after running on the power supply.

Adjusting method:

1) Check that the voltage of Pin ⑲ (EVF UNREG) of CPC of the FP-379 flexible board is 6.0 ± 0.1 Vdc.
2) Change the data of page: D, address: 50, and set the potential difference (A) between EVF UNREG and EVF UNREG (–) to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.

## 7. White Balance Adjustment (VF-96 board)

Correct the white balance.

If deviated, the reproduction of the LCD screen may degenerate.

| | |
|---|---|
| Mode | CAMERA mode |
| Signal | Arbitrary |
| Measurement Point | Check on the LCD display |
| Measuring Instrument | |
| Adjustment Page | D |
| Adjustment Address | 49, 4A |
| Specified Value | The LCD display should be B/W. |

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set the data of page: D, addresses: 49 and 4A to the initial value.

   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| Address | Data |
|---|---|
| 49 | A4 |
| 4A | BC |

3) Input the following data to page: D, address: 40 to 45.

   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| Address | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| Data | 00 | 27 | 00 | 00 | 00 | 00 |

4) Check that the LCD display is B/W. If colored, change the data of page: D, addresses: 49 and 4A so that the LCD display becomes B/W.

   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

5) Input the following table in page: D, address: 40 to 45.

   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| Address | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| Data | 3D | 04 | 20 | 20 | A2 | 00 |

6) Set data: 00 to page: 0, address: 01.

## 8. AUTO ON Level Adjustment (VF-95 board)

Adjust the power save sensor, and maintain at the level at which the backlight is AUTO ON.

| | |
|---|---|
| Mode | VTR stop |
| Signal | Arbitrary |
| Measurement Point | Check that the backlight lights up |
| Measuring Instrument | |
| Adjustment Page | D |
| Adjustment Address | 51 |
| Specified Value | AUTO OFF distance<br>Above 12 cm, less than 14 cm<br>(Note 2)<br>AUTO ON distance<br>Above 9 cm, less than 11 cm<br>(Note 2) |

**Note 1:** Do not perform this adjustment in strong light or under lights.

**Note 2:** The specified value is the adjustment value during adjustments. The specified value during operation checks is as follows.
AUTO OFF distance: Above 9 cm, less than 15 cm
AUTO ON distance: Above 7 cm, less than 13 cm

Switch setting:

1) Set the "VF PW-SAVE" on the menu screen to "ON".

Adjustment preparation:

1) Prepare a 30 cm x 30 cm white paper, and place it 10 cm away from the EVF lens.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Input the following data to page: D, addresses: 40 to 45.
   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| **Address** | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| **Data** | 00 | 00 | 00 | 00 | 00 | 00 |

3) Increase the data of page: D, address 51, and turn on the backlight.
4) Decrease the data of page: D, address: 51 slowly, and turn off the backlight.
5) Press the PAUSE button of the remote commander.
6) Move the white paper away from the EVF lens and turn off the backlight. Then move it to the lens slowly, and check that the backlight lights up when the distance (AUTO ON distance) is the specified value.
7) Move the white paper near the EVF lens so that the backlight lights up, and then move it away, and check that the back light goes off when the distance (AUTO OFF distance) is the specified value.
8) Input the following data to page: D, address: 40 to 45.
   **Note:** To write in the non-volatile memory (EEPROM), press the PAUSE button of the adjusting remote commander each time to set the data.

| **Address** | 40 | 41 | 42 | 43 | 44 | 45 |
|---|---|---|---|---|---|---|
| **Data** | 3D | 04 | 20 | 20 | A2 | 00 |

9) Set data: 00 to page: 0, address: 01.

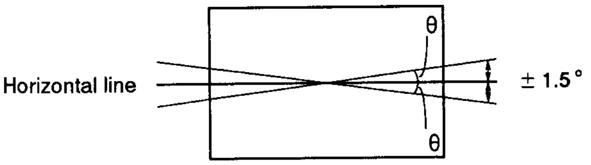
## 1-4. B/W ELECTRONIC VIEWFINDER SYSTEM ADJUSTMENTS (CCD-TR2200E, CC 886)

### 1-4-1. Horizontal Slant Check

| Mode | Playback |
|---|---|
| Signal | Alignment tape:<br>For checking operations<br>(WR5-8CSE)<br>Monoscope section |
| Specified Value | ± 1.5° |

Adjusting method:

1) Adjust RV904 (BRIGHT) so that the CRT can be seen easily and clearly.
2) Check that the difference between the horizontal line and the tilt of the black mask satisfies the specified value.


θ
Horizontal line
± 1.5°
θ

Specified value: The image should be within ± 1.5° of the horizontal line.

Fig. 6-1-19.

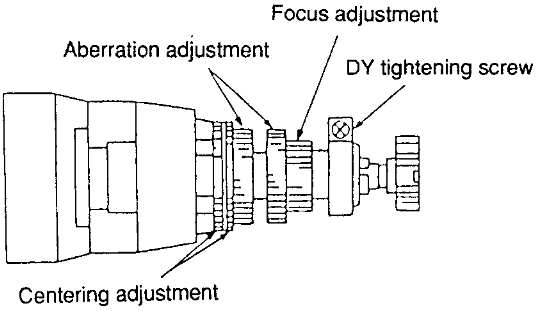

Focus adjustment
Aberration adjustment
DY tightening screw
Centering adjustment

Fig. 6-1-20.

### 1-4-2. Centering Adjustment

| Mode | Playback |
|---|---|
| Signal | Alignment tape:<br>For checking operations<br>(WR5-8CSE)<br>Monoscope section |
| Specified Value | ± 4% |

Adjusting method:

1) Use the centering adjustment ring and adjust so that the left, right, top, and bottom sides of the display are uniform. (Refer to Fig. 6-1-20.)

   **Note:** As the centering position changes due to earth magnetism, rotate it 360° in the horizontal direction, and adjust with the center section of the modifying position.

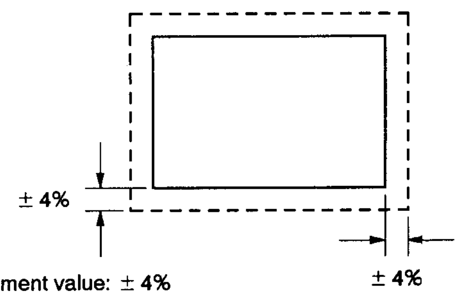

± 4%
Adjustment value: ± 4%
± 4%

Fig. 6-1-21.

### 1-4-3. Focus Adjustment

| Mode | Playback |
|---|---|
| Signal | Alignment tape:<br>For checking operations<br>(WR5-8CSE)<br>Monoscope section |

Adjusting method:

1) Adjust the focus ring to obtain the optimum focus. (Refer to Fig. 6-1-20.)

### 1-4-4. Aberration Adjustment

| | |
|---|---|
| Mode | E-E |
| Signal | Dot pattern |
| Specified Value | $b_1 \leqq 2 \cdot a_1$<br>$b_2 \leqq 0.8 \cdot a_2$ |

Adjusting method:

1) Adjust the aberration adjustment ring so that the tracing of the dot satisfies the specified value.
2) If the centering becomes displaced here, perform the centering adjustment from the beginning again.

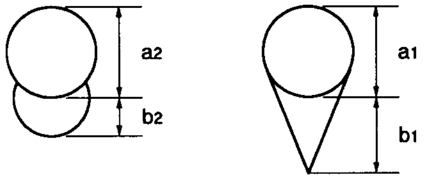
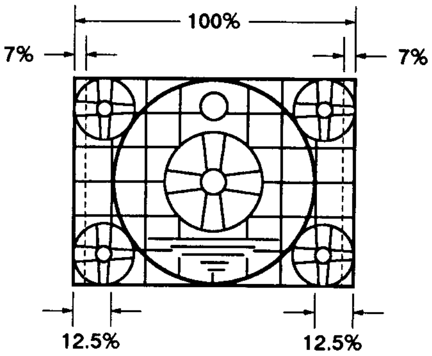


Fig. 6-1-22.



| SOL901 | Size H |
|---|---|
| Open | Small |
| Short | Big |

Fig. 6-1-23.

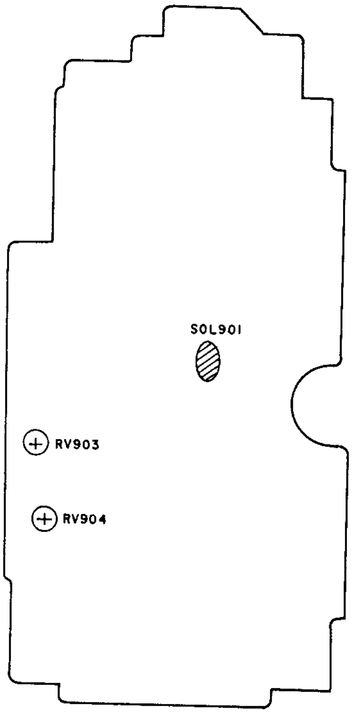
### 1-4-5. Horizontal Amplitude Adjustment (VF-104 board)

| | |
|---|---|
| Mode | Playback |
| Signal | Alignment tape:<br>For checking operations<br>(WR5-8CSE)<br>Monoscope section |
| Adjusting Element | C909 (SOL901) |
| Specified Value | 14 ± 6% |

Adjusting method:

1) Rotate RV903, and adjust the top and bottom sides of the monoscope image to the top and bottom edges of the display.
2) Rotate RV904 so that the brightness is the normal level.
3) Solder or unsolder SOL901 pattern of the H size adjustment capacitor (C909) to "short" or "open", so that the horizontal direction over scan becomes 14 ± 6% (Left and right totals).

VF-104 board (Component side)



### 1-4-6. Vertical Amplitude Adjustment (VF-104 board)

| Mode | Playback |
|---|---|
| Signal | Alignment tape:<br>For checking operations<br>(WR5-8CSE)<br>Monoscope section |
| Adjusting Element | RV903 |
| Specified Value | 10 ± 3% |

Adjusting method:

1) Adjust RV903 so that the vertical direction over scan becomes 10 ± 3% (Top and bottom totals).

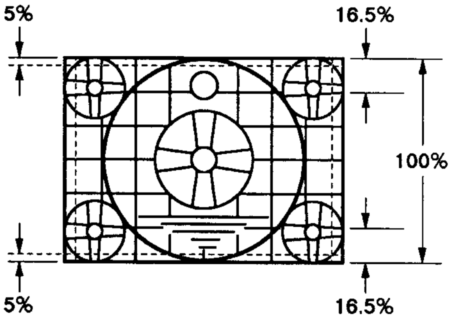


Fig. 6-1-24.

### 1-4-7. Brightness Adjustments (VF-104 board)

| Mode | Playback |
|---|---|
| Signal | Alignment tape:<br>For checking operations<br>(WR5-8CSE)<br>Monoscope section |
| Specified Value | RV904 |

Adjusting method:

1) Rotate RV904, and adjust so that the bright/dark sections of the gray scale are displayed correctly. (The bright section should be unsatisfactory till the cross hatch appears vague in the monoscope circle. The dark section should be unsatisfactory till the darkest section and the second darkest section of the gray scale cannot be differentiated.)

### 1-4-8. Horizontal Amplitude, Vertical Amplitude, Focus Check

"1-4-5. Horizontal Amplitude Adjustment" and "1-4-6. Vertical Amplitude Adjustment" should both satisfy the specified values. If not, perform the adjustments from the beginning again. In this case, perform [1-4-7. Brightness, Contrast Adjustments] again. Moreover, check the focus, and if it found to be vague, perform "1-4-3. Focus Adjustment" and "1-4-4. Aberration Adjustment".

# 6-2. MECHANICAL SECTION ADJUSTMENT

## Mechanism Parts Adjustments

For details on the adjustments and checks of mechanical section and replacements of mechanism parts, refer to the separate volume- "8 mm Video Mechanism Adjustment Manual VII B Mechanism".

## 2-1. OPERATING WITHOUT A CASSETTE

1) Refer to "2. DISASSEMBLY" and supply the power with the cabinet removed. (So that the mechanical deck can be operated.)
2) Connect the adjusting remote commander to the remote terminal.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Close the cassette compartment without loading a cassette and complete loading.
5) Set data: 01 to page: 0, address: 01.
6) Set data: 01 to page: F, address: 29, and press the PAUSE button of the adjusting remote commander.
7) Set data: 04 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.

By carrying out the above procedure, the unit can be operated without loading a cassette.

Be sure to carry out "Processing after Operations" after checking the operations.

Set the data of page: D, address: 10 to the following if the sensor ineffective mode, forced VTR power supply ON mode or forced camera power supply ON mode are to be used together.

Forced VTR power supply ON mode..........06
Forced camera power supply ON mode......05

### [Processing after Operations]

1) Set data: 01 to page: 0, address: 01.
2) Set data: 00 to page: F, address: 29, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.
5) Disconnect the power supply of the unit.

## 2-2. TAPE PATH ADJUSTMENT

### 1. Preparations for adjustments

1) Clean the tape path face (tape guide, drum, capstan shaft, pinch roller).
2) Connect the adjusting remote commander to the remote terminal.
3) Turn on the HOLD switch of the adjusting remote commander.
4) Select page: 0, address: 01, and set data: 01.
5) Select page: F, address: 29, and set data: 04 and press the PAUSE button of the adjusting remote commander.
   (Be sure to perform "Processing after operations" after completing adjustments.)
6) Connect the oscilloscope.
   Channel 1-Pin ⑨ of CPC of FP-379 flexible board
   External trigger-Pin 4 of CPC of FP-379 flexible board
   (Connect the oscilloscope via the multi CPC-5 jig (J-6082-351-A).)
7) Playback the alignment tape for tracking (WR5-1CP).
8) Check that the RF waveform of the oscilloscope is flat at both the entrance and the exit.
   If not flat, perform necessary adjustment according to the separate "8 mm Video Mechanical Adjustment Manual VII (B Mechanism)".
9) Perform "Processing after operations", after completing adjustments.

CPC of FP-379 flexible board

| Pin No. | Signal Name | Pin No. | Signal Name |
|---|---|---|---|
| 1 | LANC SIG | 2 | LANC DC |
| 3 | CAP FG | 4 | RF SWP |
| 5 | 1/2 SWP | 6 | REC RF |
| 7 | REG GND | 8 | PB PCM RF |
| 9 | PB RF | 10 | CHASSIS GND |
| 11 | RF AGC IN | 12 | AFC FO |
| 13 | EZ I/O | 14 | RF AGC OUT |
| 15 | REC AFM | 16 | BPF MON |
| 17 | EVF UNREG (–) | 18 | VCO |
| 19 | EVF UNREG | 20 | EVF VG |

### [Processing after operations]

1) Connect the adjusting remote commander, and turn on the HOLD switch.
2) Select page: 0, address: 01, and set data: 01.
3) Select page: F, address: 29, and set data: 00.
4) Press the PAUSE button of the adjusting remote commander.
5) Select page: 0, address: 01, and set data: 00.
6) Remove the power supply from the unit.

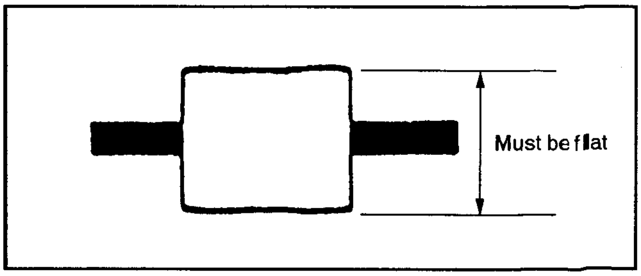


Fig. 6-2-1.

# 6-3. VIDEO SECTION ADJUSTMENTS

**When performing adjustments, refer to the layout diagrams for adjustment related parts beginning from page 6–58.**

## 3-1. PREPARATIONS BEFORE ADJUSTMENT

The following adjusting instruments are used for adjusting the video section.

### 3-1-1. Equipments to be Used

1) TV monitor
2) Oscilloscope: 2 phenomena, band 30 MHz or wider, with delay mode. (Use a 10:1 probe unless specified otherwise.)
3) Frequency counter
4) Pattern generator with video output terminal
5) Digital voltmeter
6) Audio generator
7) Audio level meter
8) Audio distortion meter
9) Audio attenuater
10) Regulated power supply
11) Alignment tape
    - For tracking adjustment (WR5-1CP)
      Part Code: 8-967-995-07
    - For video frequency characteristics adjustment (WR5-7CE) Part Code: 8-967-995-18
    - For checking Standard 8 mm mode operations
      For LP (WR5-4CL)
      Part Code: 8-967-995-56
      For SP (WR5-5CSP)
      Part Code: 8-967-995-47
      **Note:** The following alignment tapes can also be used.
      1) WR5-4CSP (8-967-995-46)
    - For checking Hi8 mode operations
      For SP (WR5-8CSE)
      Part Code: 8-967-995-48
      For LP (WR5-8CLE)
      Part Code: 8-967-995-57
    - For checking AFM stereo operations (WR5-9CS)
      Part Code: 8-967-995-28
      For checking BPF adjustment (WR5-11CS)
      Part Code: 8-967-995-76
12) Remote commander for adjustment (J-6082-053-B)
13) CPC-5 jig Part Code: J-6082-351-A
14) Power code Part Code: J-6082-223-A
15) AFM DEV jig (J-6082-312-A)
16) Extension cable (60P, 0.5 mm) (J-6082-356-A)
17) Extension cable (50P, 0.5 mm) (J-6082-355-A)

### 3-1-2. Precautions in Adjustment

1) The adjustments of this unit can be performed in the VTR mode (S video terminal input or video terminal input mode) or in the camera mode.
When set to the VTR mode, set the power switch to "PLAYER or VTR" or set to the "forced VTR power supply ON mode" using the adjusting remote commander.
To set to the camera mode, set the power switch to "Camera" or set to the "forced camera+VTR power supply ON mode" (Note 2) using the adjusting remote commander.
After completing adjustments, be sure to exit the "forced VTR power supply ON mode" (Note 1) and "forced camera+VTR power supply ON mode". (Note 3)
2) The front panel block (MA-269 board, focus ring) need not be connected. To disconnect, disconnect the following connector.
   1. CN303 of MA-269 board (13P, 0.5 mm)
   2. 8P connector of the focus ring
3) The lens block (CD-149 board) and accessory shoe are not required for video section adjustments (excluding the battery end adjustment). During adjustments, disconnect the following four connectors.
   1. CN113 of VC-177 board (23P, 0.5 mm)
   2. CN112 of VC-177 board (16P, 0.5 mm)
   3. CN205 of VC-177 board (10P, 0.5 mm)
   4. CN603 of VP-45 board (13P, 0.5mm)
4) The viewfinder need not be connected. To disconnect, disconnect the following connector.
   1. CN111 of VC-177 board (20P, 0.5mm)
5) The cabinet (R) (CF block, LCD) need not be connected be set to the "forced VTR power supply ON mode" or "forced camera+VTR power supply ON mode" (excluding battery end adjustment). To disconnect, disconnect the following connector.
   1. CN502 of HI-40 board (24P, 0.5 mm)
   After completing adjustments, be sure to exit the "forced VTR power supply ON mode" and "forced camera+VTR power supply ON mode". (Note 3)
6) When opening the HI-40 board, use the following extension cable.
   1. J-6082-356-A (60P, 0.5 mm)
7) When opening the MM-32 board, use the following extension cable. (Digital Memory model)
   1. J-6082-355-A (50P, 0.5 mm)

**Note 1:** Setting the "forced VTR power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 02 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
Hereafter, VTR operations cannot be performed even if the cabinet (R) is removed using the above steps.
After completing adjustments, be sure to exit the "forced VTR power supply ON mode".

**Note 2:** Setting the "forced camera+VTR power supply ON mode" (camera mode)
1) Set data: 01 to page: 0, address: 01.
2) Set data: 03 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
Hereafter, VTR operations can be performed even if the cabinet (R) is removed using the above steps.
After completing adjustments, be sure to exit the "forced VTR power supply ON mode".

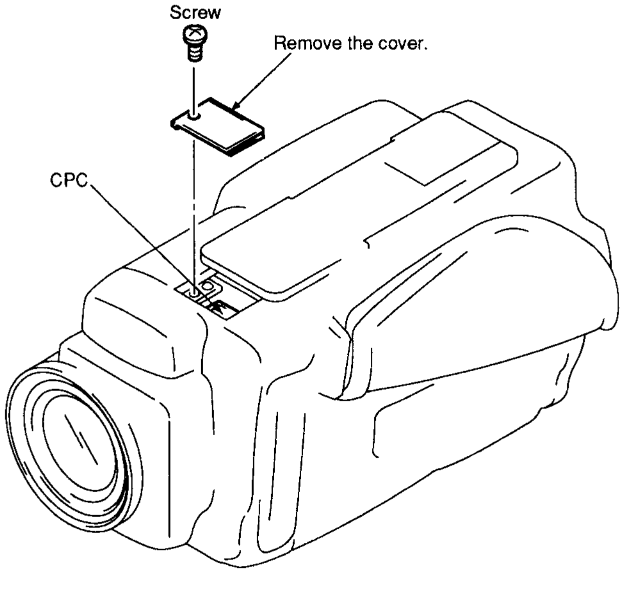
**Note 3:** Exiting the "forced power supply ON mode"
1) Set data: 01 to page: 0, address: 01.
2) Set data: 00 to page: D, address: 10, and press the PAUSE button of the adjusting remote commander.
3) Set data: 00 to page: 0, address: 01.

### 3-1-3. Connector for Adjustments

Some of the video section adjusting points are concentrated in the CPC of the FP-379 flexible board. Connect the measuring instruments via the CPC-5 jig (J-6082-351-A).

| Pin No. | Signal Name | Pin No. | Signal Name |
|---|---|---|---|
| 1 | LANC SIG | 2 | LANC DC |
| 3 | CAP FG | 4 | RF SWP |
| 5 | 1/2 SWP | 6 | REC RF |
| 7 | REG GND | 8 | PB PCM RF |
| 9 | PB RF | 10 | CHASSIS GND |
| 11 | RF AGC IN | 12 | AFC FO |
| 13 | EZ I/O | 14 | RF AGC OUT |
| 15 | REC AFM | 16 | BPF MON |
| 17 | EVF UNREG (–) | 18 | VCO |
| 19 | EVF UNREG | 20 | EVF VG |

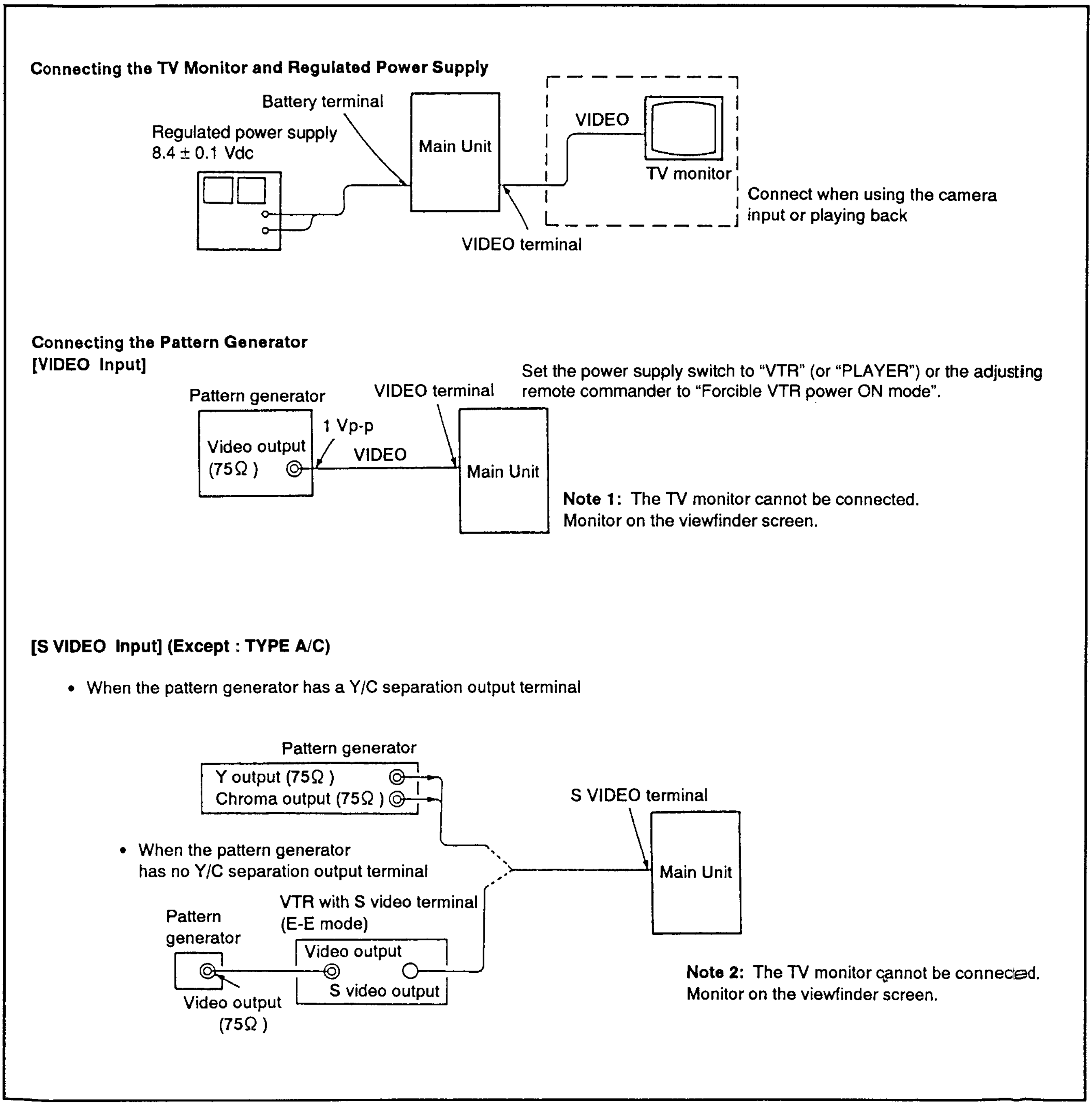
Table 6-3-1.



### 3-1-4. Connecting the Equipments

Connect the measuring instruments as shown in Fig. 6-3-1 according to the input terminal specifications (VIDEO input or S VIDEO input), and perform the adjustments.
The input terminal is specified in the ( ) in the signal column. Either input terminal can be used when there are no specifications.

**Note 1:** When adjustments are performed with the S video output terminal VTR as the signal source, the efficiencies of the unit may be affected by the VTR. It is recommended that a pattern generator with a Y/C separation output terminal be used as much as possible.



**Connecting the TV Monitor and Regulated Power Supply**

Battery terminal
Regulated power supply
8.4 ± 0.1 Vdc
Main Unit
VIDEO
TV monitor
VIDEO terminal

Connect when using the camera input or playing back

**Connecting the Pattern Generator**
**[VIDEO Input]**

Pattern generator
Video output
(75Ω)
1 Vp-p
VIDEO
VIDEO terminal
Main Unit

Set the power supply switch to "VTR" (or "PLAYER") or the adjusting remote commander to "Forcible VTR power ON mode".

**Note 1:** The TV monitor cannot be connected. Monitor on the viewfinder screen.

**[S VIDEO Input] (Except : TYPE A/C)**

- When the pattern generator has a Y/C separation output terminal

Pattern generator
Y output (75Ω)
Chroma output (75Ω)
S VIDEO terminal
Main Unit

- When the pattern generator has no Y/C separation output terminal

VTR with S video terminal
(E-E mode)
Pattern
generator
Video output
S video output
Video output
(75Ω)

**Note 2:** The TV monitor cannot be connected. Monitor on the viewfinder screen.

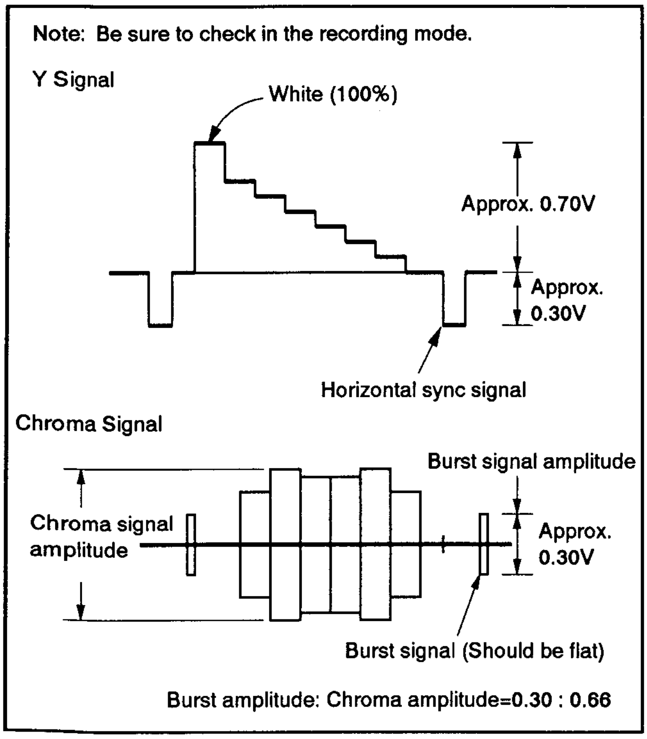
Fig. 6-3-1.

### 3-1-5. Checking the Input Signals

Because the video signal obtained from the pattern generator is used as the adjustment signal for adjusting the VTR section, the video output signal must satisfy the given specifications.

### 1. S VIDEO input
### (Except AEP, UK model)
### (Except TYPE A/C)

Connect the oscilloscope to the Y signal terminal of the S VIDEO terminal, and check that the sync signal of the Y signal is approximately 0.30V and that the amplitude of the video section is approximately 0.70V. (When a VTR with the S VIDEO output terminal is used, also check that the chroma signal and burst signal have not remained.) Connect the oscilloscope to the chroma signal terminal of the S VIDEO terminal, and check that the burst signal amplitude of the chroma signal is approximately 0.30V and flat, and that the amplitude ratio of the burst signal to the chroma signal is 0.30 : 0.66. The Y and chroma signals used in the adjustment are shown in Fig. 6-3-2.



Note: Be sure to check in the recording mode.

Y Signal
White (100%)
Approx. 0.70V
Approx. 0.30V
Horizontal sync signal
Chroma Signal
Burst signal amplitude
Chroma signal amplitude
Approx. 0.30V
Burst signal (Should be flat)

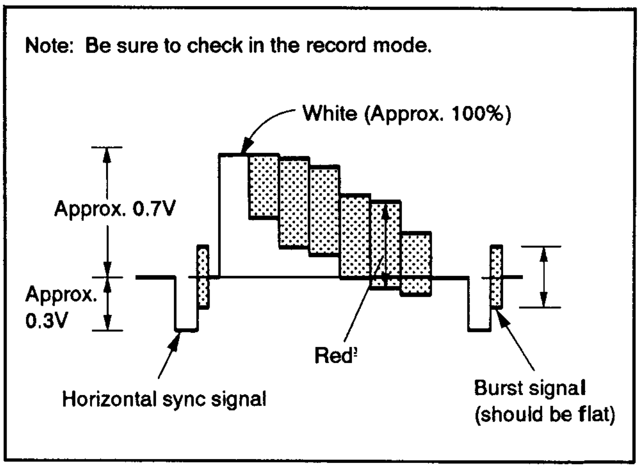
Burst amplitude: Chroma amplitude=0.30 : 0.66

Fig. 6-3-2. Color bar signal of pattern generator

### 2. VIDEO input

Connect the oscilloscope to the VIDEO terminal, and check that the sync signal amplitude of the video signal is approximately 0.30V, the amplitude of the video section is approximately 0.70V, the amplitude of the burst signal is approximately 0.30V and flat, and that the level ratio of the burst signal to the "red" signal is 0.30 : 0.66.

The video signal (color bar) used for adjusting the VTR section is shown in Fig. 6-3-3.



Note: Be sure to check in the record mode.

White (Approx. 100%)
Approx. 0.7V
Approx. 0.3V
Red
Horizontal sync signal
Burst signal (should be flat)

Fig. 6-3-3. Color Bar Signal of Pattern Generator

### 3-1-6. How to Set the REC Mode in the Model without REC switch (AEP, UK model)

**Note:** The chrome signal cannot be input and recorded.

1. REC key forbidden accept mode cancel
    1. Connect the adjustment remote commander to the remote terminal.
    2. Turn on the power.
    3. Turn on the HOLD switch of the adjustment remote commander.
    4. Select the page: 0 address: 01, and set the data to 01.
    5. Select the page: D address: 12, and set the data to FE.
6. Press PAUSE button on the adjustment remote commander.

The REC key is accepted through the above procedure.

2. REC mode setting
    1. Turn off the HOLD switch of the adjusting remote commander.
    2. Press REC buttons of the adjusting remote commander.
    3. Perform "3. Procedure after completed the adjustment" after completing adjustment .

3. Procedure after completed the adjustment

    Be sure to return the mode to REC key forbideden accept mode after adjustment.

    1. Connect the adjustment remoter commander.
    2. Turn on the power.
    3. Turn on the HOLD switch of the adjustment remote commander.
    4. Select the page: 0 address: 01, and set the data to 01.
    5. Select the page: D address: 12, and set the data to FC.
    6. Press PAUSE button on the adjustment remote commander.
    7. Select the page: 0 address: 01, and set the data to 00.

### 3-1-7. Alignment Tape

The following table lists alignment tapes which are available. Use the tape specified in the signal column for each adjustment. If the type of tape to be used for checking operations is not specified, use whichever type.

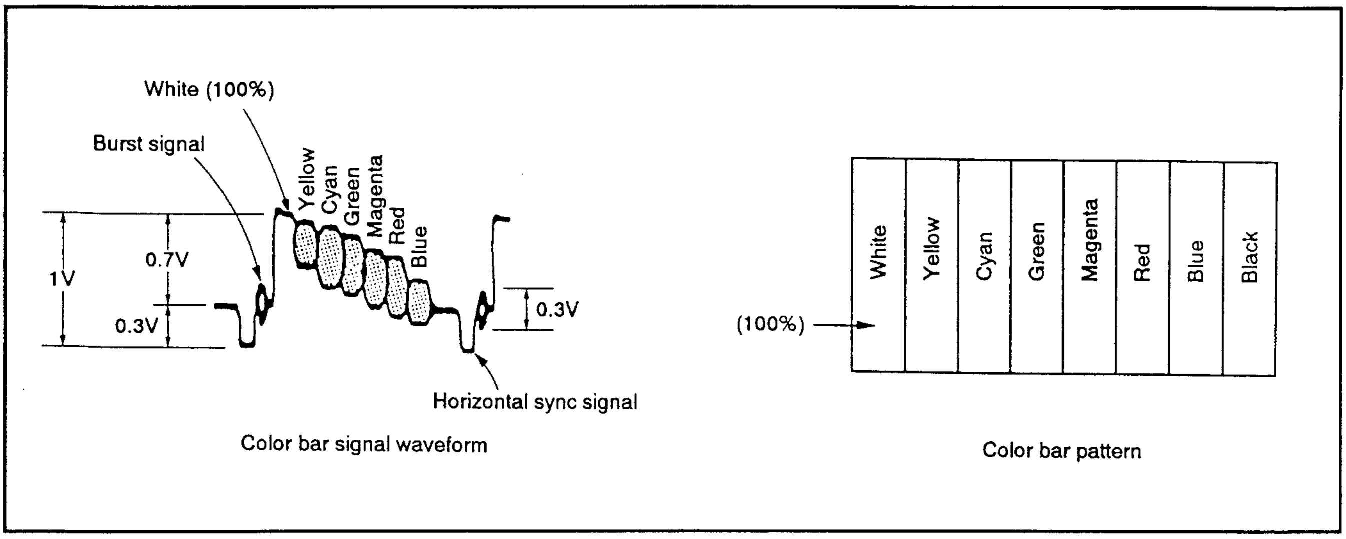
| Name | Record -ing mode | Tape type | Tape speed | Usage |
|---|---|---|---|---|
| Tracking<br>WR5-1CP | Standard 8 mm | MP | SP | Tape path adjustment<br>Switching position adjustment |
| Video frequency characteristics<br>WR5-7CE | Hi8 | ME | LP | Frequency characteristics adjustment |
| Operation check<br>WR5-5CSP | Standard 8 mm | MP | SP | Checking operations |
| Operation check<br>WR5-8CSE | Hi8 | ME | SP | |
| Operation check<br>(LP mode)<br>WR5-4CL | Standard 8 mm | MP | LP | |
| Operation check<br>(LP mode)<br>WR5-8CLE | Hi8 | ME | LP | |
| AFM stereo<br>Operation check<br>WR5-9CS | Standard 8 mm | MP | SP | AFM stereo Checking operations |
| BPF adjustment<br>WR5-11CS | Standard 8 mm | MP | SP | BPF adjustment |

Tape type
MP.... Particle type metal tape
ME ... Evaporated type metal tape

**Table 6-3-2.**

Fig. 6-3-4. shows the 75% color bar signals recorded on the alignment tape.

**Note:** Measure using the video output terminal (Terminated at 75 Ω)


White (100%)
Burst signal
Yellow
Cyan
Green
Magenta
Red
Blue
1V
0.7V
0.3V
0.3V
Horizontal sync signal
(100%)
White
Yellow
Cyan
Green
Magenta
Red
Blue
Black

Color bar signal waveform

Color bar pattern

Fig. 6-3-4. Color Bar Signals of the Alignment Tape

### 3-1-8. Input/Output Level and Impedance

1. AEP, UK model (TYPE A/C)
   Video output Phono jack, 1 Vp-p, 75Ω, unbalanced, sync negative
   S video output 4-pin mini DIN
   Luminance signal:
   1Vp-p, 75Ω, unbalanced, sync negative
   Chrominance signal:
   0.3Vp-p 75Ω, unbalanced
   Audio output Phono jack,
   Input: –7.5 dBs, input impedance more than 47 kΩ
   Output: –7.5 dBs, (at load impedance 47 kΩ), impedance less than 2.2 kΩ

2. Except AEP, UK model (TYPE B/D)
   Video input/output
   Phono jack, 1 Vp-p, 75Ω, unbalanced, sync negative
   S video input/output
   4-pin mini DIN
   Luminance signal:
   1Vp-p, 75Ω, unbalanced, sync negative
   Chrominance signal:
   0.3Vp-p 75Ω, unbalanced
   Audio input/output
   Phono jack,
   Input: –7.5 dBs, input impedance more than 47 kΩ
   Output: –7.5 dBs, (at load impedance 47 kΩ), impedance less than 2.2 kΩ

### 3-1-9. Recording Mode (Standard 8/Hi8) switching

The record mode (Standard 8/Hi8) of this unit switches as shown in the following table. The playback mode (Standard 8/ Hi8) switches automaticaly according to the recording mode of the tape played back.

| Hi8 Switch (Menu Display) | Tape Used | Recording Mode |
|---|---|---|
| AUTO | ME | Hi8 |
|  | Hi8 MP |  |
|  | MP | Standard 8 |
| OFF | ME | Standard 8 |
|  | Hi8 MP |  |
|  | MP |  |

### 3-1-10. Service Mode

Additional note on adjustment

**Note:** After the completion of the all adjustments, cancell the service mode by either of the following ways.

1) Unplug the main power supply and remove the lithium battery. (In this case, date and time and menu setting have been set by users are canceled. Perform resetting.)
2) After data on page: D and F is restored, return data of the address: 01 on page: 0 to 00. And when data on page: 2 or page: 3 is changed, return the data to the original condition.

### 1. Test mode setting

Set/release each test mode. Set data: 01 to page: 0, address: 01 before setting the data of page D.

| Page F | Address 29 |
|---|---|

| Data | Function |
|---|---|
| 00 | Normal |
| 01 | Test mode<br>Various emergency prohibitions and releases<br>Drum emergency, capstan emergency, loading motor emergency, reel emergency, tape top and end, DEW detection |

| Page D | Address 10 |
|---|---|

| Data | Function |
|---|---|
| 00 | Normal |
| 01 | Camera power ON |
| 02 | VTR power ON |
| 03 | Camera+VTR power ON |

* For page D and F, the data set will be recorded in the nonvolatile memory by pressing the PAUSE button on the adjusting remote commander. Take note that, in this case, the test mode will not be released even if the main power has been turned off (8.4 Vdc).

* Be sure to return this address data to 00 after completing adjustments/repairs and press the PAUSE button of the adjusting remote commander. And set data: 00 to page: 0, address: 01.

### 2. Emergency Memory Address

| Page F | Address 10 to 1B |
|---|---|

| Address | Contents |
|---|---|
| 10 | 1st EMG code |
| 12 | Upper: MSW code when the mechanism starts shifting the 1st time<br>Lower: MSW code when the 1st emergency occurs |
| 13 | Lower: Target MSW code of the 1st emergency occurs |
| 14 | 2nd EMG code |
| 16 | Upper: MSW code when the mechanism starts shifting the 2nd time<br>Lower: MSW code when the 2nd emergency occurs |
| 17 | Lower: Target MSW code of the 2nd emergency occurs |
| 18 | Last EMG code |
| 1A | Upper: MSW code when the mechanism starts shifting the last time<br>Lower: MSW code when the last emergency occurs |
| 1B | Lower: Target MSW code of the last emergency occurs |

When there are no emergency, data 00 will be written in the above addresses (10 to 1B). When the first emergency occurs, the data corresponding to the emergency will be written in the address (10 to 13) for this first emergency. In the same way, when the second emergency occurs, the data corresponding to the emergency will be written in the address (14 to 17) for this second emergency.

The data corresponding to the emergency occurring the last will be written in the address (18 to 1B) for this last emergency.

Therefore the data of addresses 18 to 1B are renewed each time an emergency occurs.

**Note 1:** Be sure to rewrite the data of addresses 10to 1B to 00 after repairs/adjustments.

**Note 2:** When rewriting the data, be sure to press the PAUSE buttton of the remote commander after setting the data.

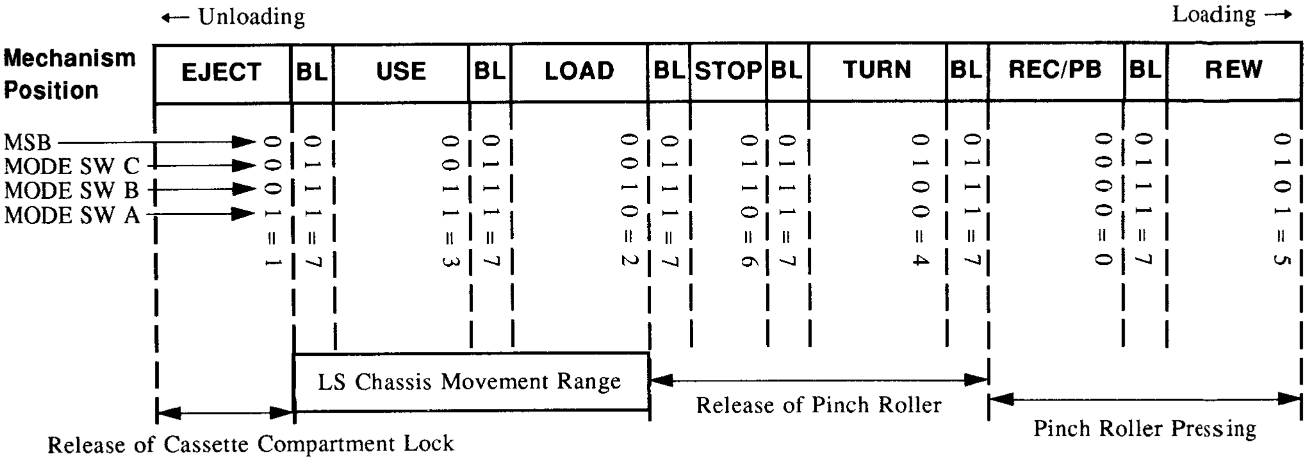
### 2-1. EMG CODE (Emergency Code)

The codes shown in the following table which correspond to errors that occur are recorded in addresses 10, 14, and 18.

| Code | Type of Emergency |
|---|---|
| 00 | No error |
| 10 | Loading motor time-out during load |
| 11 | Loading motor time-out during unload |
| 20 | T reel emergency (reel slack) during unloading |
| 21 | S reel emergency (reel slack) during unloading |
| 22 | T reel emergency |
| 23 | S reel emergency |
| 30 | FG emergency at the start up of the capstan |
| 31 | FG emergency during the normal rotation of the capstan |
| 40 | FG emergency at the start up of the drum |
| 41 | PG emergency at the start up of the drum |
| 42 | FG emergency during the normal rotation of the drum |
| 43 | PG emergency during the normal rotation of the drum |
| 44 | Phase emergency during the normal rotation of the drum |

## 2-2. MSW Codes

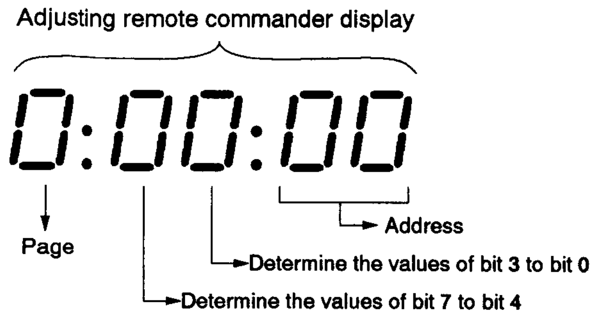
- The lower parts of the data of addresses 12, 16 and 1A represent the MSW codes (mode switch, mechanism position) when errors occurs.
- The upper parts of the data of addresses 12, 16 and 1A represent, when the mechanism position is to be moved, the MSW codes at the start of movement (when moving the loading motor).
- The lower parts of the data of addresses 13, 17 and 1B represent the MSW codes of the desired movement when the mechanism position is to be moved.


← Unloading
Loading →
Mechanism Position
EJECT
BL
USE
BL
LOAD
BL
STOP
BL
TURN
BL
REC/PB
BL
REW
MSB
MODE SW C
MODE SW B
MODE SW A
0001=1
0111=7
0011=3
0111=7
0010=2
0111=7
0110=6
0111=7
0100=4
0111=7
0000=0
0111=7
0101=5
LS Chassis Movement Range
Release of Pinch Roller
Pinch Roller Pressing
Release of Cassette Compartment Lock

| Mechanism Position | MSW Code | Contents |
|---|---|---|
| EJECT | 1 | Position at which the cassette compartment lock is released. The mechanism will not move any further in the unloading direction. |
| BL | 7 | BLANC code. Between two codes. The mechanism will not be stopped by this code while it is operating. |
| USE | 3 | EJECT completion position. When the cassette is ejected, the mechanism will stop at this position. |
| LOAD | 2 | Code during loading/unloading. Code that is used while the LS chassis is moving. |
| STOP | 6 | Normal stop position. The pinch roller separates, the tension regulator returns, and the brakes of both reels turn on. |
| TURN | 4 | Position at which is used when the pendulum gear swings from S to T or from T to S. |
| RECP/PB | 0 | PB, REC, CUE, REV, PAUSE, FF positions.<br>The pinch roller is pressed and tension regulator is on. |
| REW | 5 | REW position. REW is carried at this position.<br>The mechanism will not move any further in the loading direction. |

### 3. Bit value discrimination

Bit values must be discriminated using the display data of the adjusting remote commander for the following items. Use the table below to discriminate if the bit value is "1" or "0".


Adjusting remote commander display
0:00:00
Page
Address
Determine the values of bit 3 to bit 0
Determine the values of bit 7 to bit 4

| | Remote commander display | Bit value | | | |
|---|---|---|---|---|---|
| | | bit 3 or bit 7 | bit 2 or bit 6 | bit 1 or bit 5 | bit 0 or bit 4 |
| | 0 | 0 | 0 | 0 | 0 |
| | 1 | 0 | 0 | 0 | 1 |
| | 2 | 0 | 0 | 1 | 0 |
| | 3 | 0 | 0 | 1 | 1 |
| | 4 | 0 | 1 | 0 | 0 |
| | 5 | 0 | 1 | 0 | 1 |
| | 6 | 0 | 1 | 1 | 0 |
| | 7 | 0 | 1 | 1 | 1 |
| Ⓐ→ | 8 | 1 | 0 | 0 | 0 |
| | 9 | 1 | 0 | 0 | 1 |
| | A (A) | 1 | 0 | 1 | 0 |
| | B (b) | 1 | 0 | 1 | 1 |
| | C (c) | 1 | 1 | 0 | 0 |
| | D (d) | 1 | 1 | 0 | 1 |
| Ⓑ→ | E (E) | 1 | 1 | 1 | 0 |
| | F (F) | 1 | 1 | 1 | 1 |

**(Example)** If the remote commander display data is "8E", bit values from bit7 to bit4 can be discriminated from column Ⓐ, and those from bit3 to bit0 from column Ⓑ.

### 4. Input/output selection check

| | |
|---|---|
| Page 3 | Address 16 |

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 0 | Not S video terminal input | | S video terminal input |
| 1 | Not video terminal input | | Video terminal input |
| 2 | Audio terminal monaural | Monaural | |
| 3 | Easy connector monaural input | Monaural | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |

Using method:

1) Select address: 16 of page: 3.
2) By discriminating the bit value of the display data, the state of the input/output selection can be discriminated.

## 5. Condensation, head clogging check

| Page 3 | Address 17 |
|---|---|

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 0 | Condensation state (1 hour preservation) | Condensation | |
| 1 | Head clogging | Head clogging | |
| 2 | | | |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |

Using method:

1) Select address: 17 of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

## 6. VTR state check (1)

| Page 3 | Address 18 |
|---|---|

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 0 | Video/audio circuit PB mode | PB mode | REC/E-E mode |
| 1 | | | |
| 2 | | | |
| 3 | | | |
| 4 | Head clog detection when REC | Head clog | |
| 5 | | | |
| 6 | Recorded tape playback | Playback | |
| 7 | Capstan rotation | Rotation | |

Using method:

1) Select address: 18 of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

## 7. VTR state check (2)

| Page 3 | Address 19 |
|---|---|

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 0 | Eject state | Eject state | |
| 1 | Cassette insertion state | Cassette in | |
| 2 | Cassette accidental erasure prevention | Accidental erasure prevention state | |
| 3 | Tape type | ME | MP |
| 4 | Tape type | Hi8 MP | NORMAL MP, ME |
| 5 | Crystal variable speed playback | Variable speed playback | |
| 6 | Variable speed playback mode | Variable speed playback mode | |
| 7 | DRUM | DRUM rotation | Stop |

Using method:

1) Select address: 19 of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

### 8. VTR state check (3)

| | |
|---|---|
| Page 3 | Address 1A |

| Bit | Function | When bit value = 1 | When bit value = 0 |
|---|---|---|---|
| 0 | Playback tape recording mode | Hi8 | Standard 8 |
| 1 | | | |
| 2 | Audio mode | Monaural | Stereo |
| 3 | | | |
| 4 | | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |

Using method:

1) Select address: 1A of page: 3.
2) By discriminating the bit value of the display data, the state of the VTR can be discriminated.

### 9. Record of Use Check

| | |
|---|---|
| Page 3 | Address E0 to E9 |

| Address | Function | | Remarks |
|---|---|---|---|
| E0 | Service status | | For checking reset. Normal = "FF". Reset: "00" |
| E1 | Drum rotation counted time (BCD code) | Hour (H) | 1000th place digit and 100th place digit of counted time (decimal digit) |
| E2 | | Hour (L) | |
| E3 | | Minute | 10th place digit and 1st place digit of counted time (decimal) |
| E4 | User initial power on date (BCD code) | Year | After setting the clock, set the date of power on next |
| E5 | | Month | |
| E6 | | Day | |
| E7 | Final condensation occurrence date (BCD code) | Year | |
| E8 | | Month | |
| E9 | | Day | |

Using method:

1) The record of use data is displayed at addresses: E0 to E9 of page 3.

**Note:** This data will be erased when the coin lithium battery is removed (reset).

### 3-1-11. Page D Addrress

**Note 1:** The ← mark shown in the adjustment data memory column indicates that the address data is fixed and is the same as the initial value.

**Note 2:** The initial adjustment data value is the value after "Page D Data Initialization" and "Page D Data Modification" have been executed. It is different from the value after all adjustments have been executed.

**Note 3:** ( ): AEP, UK model (YTPE A/C)
[ ]: E, Australian, Hong Kong model (TYPE B/D)
< >: CC 886

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 10 | 00 | 00 | 00 | ← |
| 11 | (06)[07] | [07] | 06<86> | ← |
| 12 | (FC)[FE] | [FE] | (FC) | ← |
| 13 | AE | 8E | 01 | ← |
| 14 | 17 | 17 | 17 | ← |
| 15 | F3 | F3 | F3 | ← |
| 16 | 10 | 10 | 10 | ← |
| 17 | 0C | 0C | 0C | ← |
| 18 | 00 | 00 | 00 | ← |
| 19 | 1E | 1E | 1E | ← |
| 1A | DF | DF | DF | ← |
| 1B | D7 | D5 | D5 | ← |
| 1C | 19 | 19 | 19 | ← |
| 1D | 00 | 00 | 00 | |
| 1E | 00 | 00 | 00 | |
| 1F | 10 | 10 | 10 | ← |
| 20 | 00 | 00 | 00 | |
| 21 | (42)[84] | [84] | (42) | ← |
| 22 | 33 | 23 | 22 | ← |
| 23 | 00 | 00 | 00<FF> | ← |
| 24 | 12 | 12 | 12 | |
| 25 | 50 | 50 | 50 | |
| 26 | 04 | 04 | 04 | |
| 27 | EA | F9 | EA | |
| 28 | 80 | 80 | 80 | |
| 29 | 85 | 85 | 85 | |
| 2A | 91 | 91 | 91 | |
| 2B | A0 | A0 | A0 | |
| 2C | A8 | A8 | A8 | |
| 2D | 05 | 05 | 05 | ← |
| 2E | 03 | 03 | 03 | ← |
| 2F | 01 | 01 | 01 | ← |
| 30 | 05 | 05 | 05 | ← |
| 31 | 73 | 73 | 73 | ← |

Table 6-3-3 (1).

| Address | Adjustment Data | | | |
|---|---|---|---|---|
| | Initial Value | | | Memo Column |
| | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 | |
| 32 | 24 | 24 | 24 | ← |
| 33 | CC | CC | CC | ← |
| 34 | 07 | 07 | 07 | ← |
| 35 | 80 | 80 | 80 | |
| 36 | C9 | C9 | C9 | ← |
| 37 | 02 | 02 | 02 | ← |
| 38 | 02 | 02 | 02 | ← |
| 39 | 04 | 04 | 04 | ← |
| 3A | 0A | 0A | 0A | |
| 3B | 32 | 32 | 32 | |
| 3C | 08 | 08 | 08 | ← |
| 3D | 80 | 80 | 80 | ← |
| 3E | 00 | 00 | 00 | |
| 3F | 03 | 03 | 03 | ← |
| 40 | 3D | 3D | | |
| 41 | 04 | 04 | | |
| 42 | 20 | 20 | | |
| 43 | 20 | 20 | | |
| 44 | A2 | A2 | | |
| 45 | 00 | 00 | | |
| 46 | 94 | 94 | | |
| 47 | 48 | 48 | | |
| 48 | A4 | A4 | | |
| 49 | A4 | A4 | | |
| 4A | BC | BC | | |
| 4B | B4 | B4 | | |
| 4C | 93 | 93 | | |
| 4D | 93 | 93 | | |
| 4E | 78 | 78 | | |
| 4F | 80 | 80 | | |
| 50 | 50 | 50 | | |
| 51 | 40 | 40 | | |
| 52 to 63 | | | | |

Table 6-3-3 (2).

## 3-2. SYSTEM CONTROL SYSTEM ADJUSTMENTS

### 1. Initialization of E, F Page Data

If the E, F page data is erased due to some reason, perform "Initialization of E, F Page Data", "Modification of F Page Data", and "Modification of E Page Data" of camera system adjustments.

### 2. Initialization of D Page Data

**Note:** If the D page data has been initialized, perform "Color Electronic Viewfinder System Adjustment" (Color EVF model) and "Battery Down Adjustment" again.

| | |
|---|---|
| Adjusting page | D |
| Adjusting address | 10 to 63 |

Initialization method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 2D to page: 3, address: 00.
3) Set data: 2D to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
4) Check that the data of page: 3, address: 02 is 01.
5) Set data: 29 to page: 3, address: 00.
6) Set data: 29 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
7) Set data: 00 to page: 0, address: 01.
8) After performing "Modification of D Page Data", perform "Color Electronic Viewfinder System Adjustment" (Color EVF model) and "Battery Down Adjustment" again.

### 3. Modification of D Page Data

If the D page data has been initialized, change the data as shown in the following table by manual input.

**Note 1:** Before changing the data, set data: 01 to page: 0, address: 01.

**Note 2:** To write in the non-volatile memory (EEPROM) after changing the data, press the PAUSE button of the adjusting remote commander each time to set the data.

**Note 3:** After changing the data, set data: 00 to page: 0, address: 01, and perform "Color Electronic Viewfinder System Adjustment" (Color EVF model) and "Battery Down Adjustment".

( ): AEP, UK model (TYPE A/C)
[ ]: E, Australian, Hong Kong model (TYPE B/D)
< >: CC 886

| Address | CCD-TR3300E | CCD-TR2300E | CCD-TR2200E, CC 886 |
|---|---|---|---|
| 10 | 00 | 00 | 00 |
| 11 | (06)[07] | 07 | 06<86> |
| 12 | (FC)[FE] | FE | FC |
| 13 | AE | 8E | 01 |
| 14 | 17 | 17 | 17 |
| 15 | F3 | F3 | F3 |
| 16 | 10 | 10 | 10 |
| 17 | 0C | 0C | 0C |
| 18 | 00 | 00 | 00 |
| 19 | 1E | 1E | 1E |
| 1A | DF | DF | DF |
| 1B | D7 | D5 | D5 |
| 1C | 19 | 19 | 19 |
| 1F | 10 | 10 | 10 |
| 21 | (42)[84] | 84 | 42 |
| 22 | 33 | 23 | 22 |
| 23 | 00 | 00 | 00<FF> |
| 24 | 12 | 12 | 12 |
| 25 | 50 | 50 | 50 |
| 26 | 04 | 04 | 04 |
| 27 | EA | F9 | EA |
| 2D | 05 | 05 | 05 |
| 2E | 03 | 03 | 03 |
| 2F | 01 | 01 | 01 |
| 30 | 05 | 05 | 05 |
| 31 | 73 | 73 | 73 |
| 32 | 24 | 24 | 24 |
| 33 | CC | CC | CC |
| 34 | 07 | 07 | 07 |
| 36 | C9 | C9 | C9 |
| 37 | 02 | 02 | 02 |
| 38 | 02 | 02 | 02 |
| 39 | 04 | 04 | 04 |
| 3A | 0A | 0A | 0A |
| 3B | 32 | 32 | 32 |
| 3C | 08 | 08 | 08 |
| 3D | 80 | 80 | 80 |

### 4. Battery End Adjustment (VC-177 board)

Set the battery end voltage.
If the voltage is incorrect, the life of the battery will shorten. The image at the battery end will also be rough.

| | |
|---|---|
| Mode | Camera record |
| Signal | Arbitrary |
| Measurement Point | LCD display of the adjusting remote control unit |
| Measuring Instrument | |
| Adjustment Page | D |
| Specified Value | 28 to 2C, 35 |

**Note:** The lens block and cabinet (R) must be connected.

Switch setting
1) AUTO FOCUS ............................................................ OFF
2) VF PW-SAVE (Menu display)
   (CCD-TR2300E/TR3300E) ........................................ OFF

Connection:
1) Connect the regulated power supply and the digital voltmeter to the battery terminal as shown in Fig. 6-3-5.

Adjusting method:
1) Adjust the output voltage of the regulated power supply so that the digital voltmeter display is 6.1 ± 0.1 Vdc.
2) Load a cassette, and set to the camera recording mode.
3) Set data: 01 to page: 0, address: 01.
4) Decrease the output voltage of the regulated power supply so that the digital voltmeter display is 5.40 ± 0.01 Vdc.
5) Set data: 03 to page: 0, address: FF.
6) Set data: 01 to page: 2, address: 01.
7) Select page: 3, address: 31, read the adjusting remote commander display data, and this data is named Dref.
8) Set data: 00 to page: 2, address: 01.
9) Set data: 00 to page: 0, address: FF.
10) Set data Dref to page: D, address: 28, and press the PAUSE button of the adjusting remote commander.
11) Set data Dref to page: D, address: 35, and press the PAUSE button of the adjusting remote commander.
12) Convert Dref to decimal notation, and obtain Dref′. (Refer to Table 6-1-4. "Hexadecimal notation - decimal notation conversion table")
13) Calculate D29′, D2A′, D2B′ and D2C′ using following equations (decimal notation calculation).
    D29′ = Dref′+5
    D2A′ = Dref′+32
    D2B′ = Dref′+53
    D2C′ = Dref′+64
14) Convert D29′, D2A′, D2B′ and D2C′ to hexadecimal notation, and obtain D29, D2A, D2B and D2C.
15) Set data: D29 to page: D, address: 29, and press the PAUSE button of the adjusting remote commander.
16) Set data: D2A to page: D, address: 2A, and press the PAUSE button.
17) Set data: D2B to page: D, address: 2B, and press the PAUSE button.
18) Set data: D2C to page: D, address: 2C, and press the PAUSE button.
19) Set data: 00 to page: 0, address: 01.

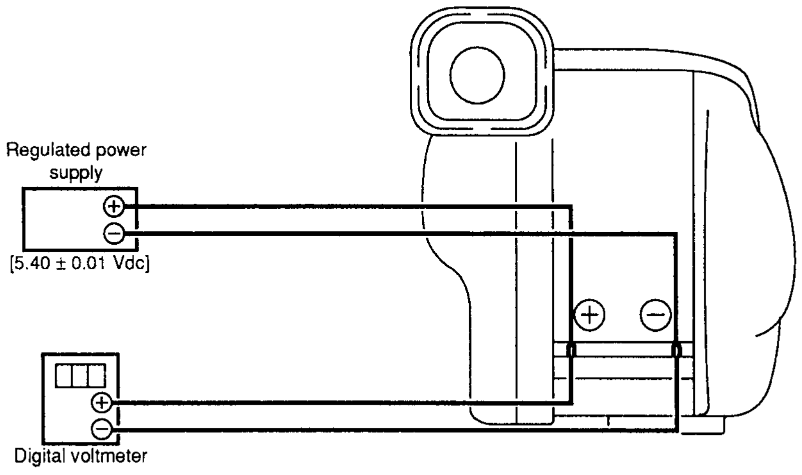


Fig. 6-3-5.

## 3-3. SERVO SYSTEM ADJUSTMENTS

### 1. CAP FG Offset Adjustment (VC-177 board)

Improve the capstan servo characteristic. If it is not correct, jitters will increase.

| | |
|---|---|
| Mode | VTR record (SP mode) |
| Signal | Arbitrary |
| Measurement Point | Pin ③ of CPC (CAP FG) on FP-379 flexible board |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 5C |
| Specified Value | Duty = 50 ± 1.5% |

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 81 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Check that the data of page: 2, address: 02 is 01.
4) Check that Duty of CAP FG signal satisfies the specified value. If not, set data: 00 to page: 2, address: 01, and press the PAUSE button, and then, repeat steps 2) to 4).
5) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

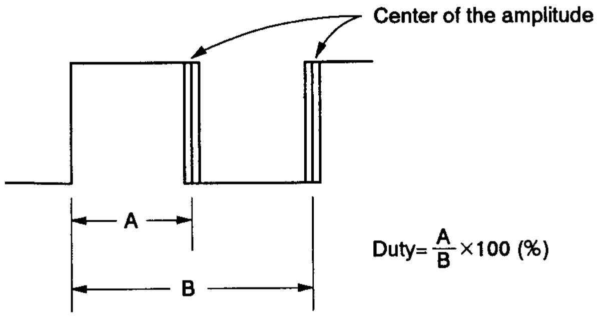


Fig. 6-3-6.

### 2. Switching Position Adjustment (VC-177 board)

If deviated in this case causes switching noise or jitter on the played back screen.

| | |
|---|---|
| Mode | Playback |
| Signal | Alignment tape:<br>For tracking adjustment<br>(WR5-1CP) |
| Measurement Point | CH1: Pin ④ of CPC (RF SWP) on FP-379 flexible board<br>CH2: Pin ⑨ of CPC (PB RF) on FP-379 flexible board |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 36, 37 |
| Specified Value | $t_1$ = 0 ± 10 µsec |

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: F, address: 37 and minimize "$t_1$", and press the PAUSE button of the adjusting remote commander. (Coarse adjustment)
3) Change the data of page: F, address: 36, and adjust so that the switching position ($t_1$) becomes the specified value. (Fine adjustment)
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 0, address: 01.

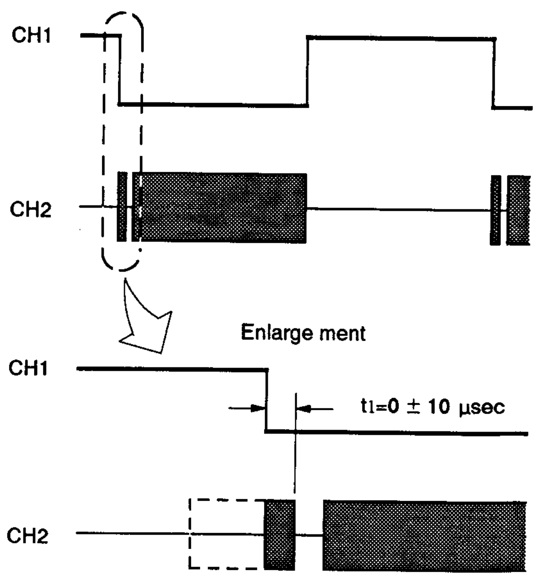


Fig. 6-3-7.

## 3-4. VIDEO SYSTEM ADJUSTMENTS

Video system adjustments must be performed in the following order.

**[Adjusting Order]**

1. 28 MHz origin oscillation adjustment
2. Filter f0 adjustment
3. Y OUT level adjustment
4. C OUT level adjustment
5. RP filter f0 adjustment
6. AFC f0 adjustment
7. REC Y current adjustment
8. REC C current adjustment

### 1. 28 MHz Origin Oscillation Adjustment (VC-177 board)

Set the frequency of the clock for synchronization.
If deviated, the synchronization will be disrupted and the color will become inconsistent.

| | |
|---|---|
| Mode | Camera E-E |
| Subject | Arbitrary |
| Measurement Point | Pin ⑫ of IC202 |
| Measuring Instrument | Frequency counter |
| Adjustment Page | F |
| Adjustment Address | 3A |
| Specified Value | f = 14187500 ± 70 Hz |

**Note:** If the x2 frequency is displayed, insert a 1 kΩ resistor between the measuring point and probe.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Change the data of page: F, address: 3A, and set the oscillation frequency to the specified value.
3) Press the PAUSE button of the adjusting remote commander.
4) Set data: 00 to page: 0, address: 01.

### 2. Filter f0 Adjustment (VC-177 board)

Minimize the chroma signal residual components during composite video signal input.

| | |
|---|---|
| Mode | VTR stop |
| Signal | Color bar (Video input) |
| Measurement Point | Pin ⑬ of CPC (EZ I/O) on FP-379 flexible board |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 66 |
| Specified Value | Minimum residual chroma signal components |

**Note:** Do not insert a plug into the S video terminal.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 33 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 66, and minimize the residual chroma signal components (A).
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

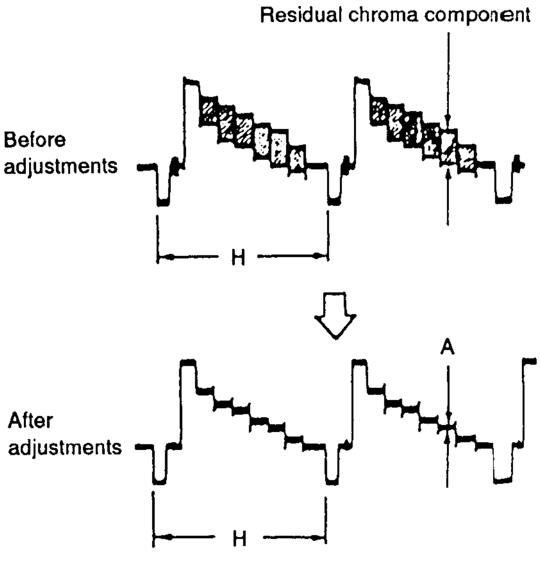


Fig. 6-3-8.

## 3. Y OUT Level Adjustment (VC-177 board)

Set the Y signal output level.

| | |
|---|---|
| Mode | Camera E-E |
| Subject | Arbitrary |
| Measurement Point | Y signal terminal of S VIDEO terminal (75Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 62 |
| Specified Value | A = 300 ± 5 mV |

**Note:** Insert the plug into the S video terminal.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 62, and set the SYNC level (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

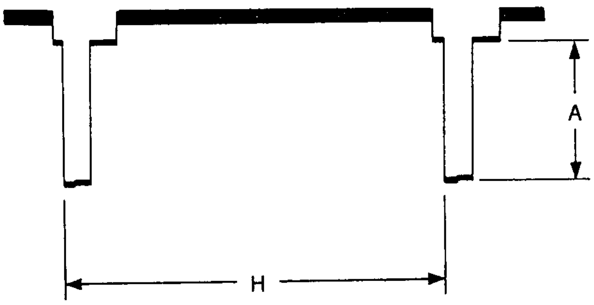


Fig. 6-3-9.

## 4. C OUT Level Adjustment (VC-177 board)

Set the chroma signal output level.

| | |
|---|---|
| Mode | Camera E-E |
| Subject | Arbitrary |
| Measurement Point | Chroma signal terminal of S VIDEO terminal (75Ω terminated) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 64 |
| Specified Value | A = 300 ± 5 mV |

**Note:** Insert the plug into the S video terminal.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 03 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 64, and set the burst level (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

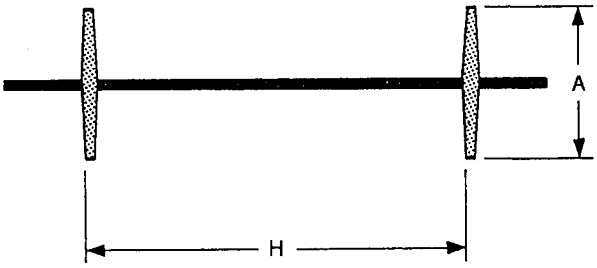


Fig. 6-3-10.

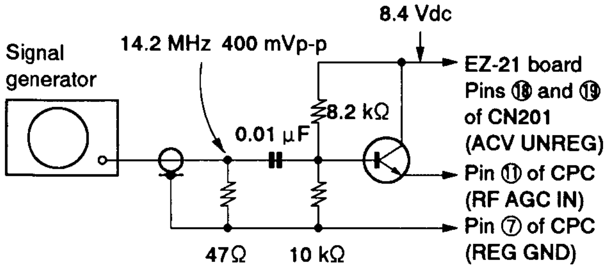
## 5. RP Filter f0 Adjustment (VC-177 board)

Adjust the LPF of the playback RF amplifier.

| | |
|---|---|
| Mode | Camera E-E |
| Subject | Arbitrary |
| Measurement Point | Pin ⑭ of CPC of FP-379 flexible board (RF AGC OUT) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 67 |
| Specified Value | A = Below 10 mVp-p |

Connection:

1) Input a 14.2 MHz, 400 mVp-p CW signal to Pin ⑪ of CPC of the FP-379 flexible board (RF AGC IN).



Transistor: General NPN transistor (2SC403, etc.)
47 Ω resistor: 1-249-401-11
8.2 kΩ resistor: 1-249-428-11
10 kΩ resistor: 1-249-429-11
0.01 μF capacitor: 1-101-004-00

Fig. 6-3-11.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 35 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 67, and minimize the 14.2 MHz signal level (A).
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

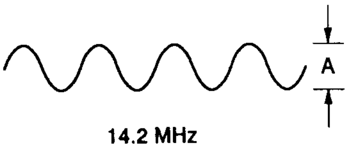


Fig. 6-3-12.

## 6. AFC f0 Adjustment (VC-177 board)

Adjust the pull-in range of the A/D converted clock generator during playback.

| | |
|---|---|
| Mode | VTR stop |
| Signal | Color bar (Video input) |
| Measurement Point | Pin ⑫ of CPC of FP-379 flexible board (AFC fo) |
| Measuring Instrument | Digital voltmeter |
| Adjustment Page | F |
| Adjustment Address | 63 |
| Specified Value | A = 2.2 ± 0.05 Vdc |

**Note:** Do not insert the plug in the S video terminal.

Adjusting method:

1) Set data: 01 to page: 0, address: 01.
2) Set data: 31 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
3) Change the data of page: F, address: 63, and set the DC voltage (A) to the specified value.
4) Press the PAUSE button of the adjusting remote commander.
5) Set data: 00 to page: 3, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

### 7. REC Y Current Adjustment (VC-177 Board)

Adjust the Y FM signal recording current.

| | |
|---|---|
| Mode | VTR recording (SP mode) |
| Signal | No signal |
| Measurement Point | Pin ⑥ of CPC of FP-379 flexible board (REC RF) |
| Measuring Instrument | Oscilloscope<br>(20 MHz band limitation: OFF) |
| Adjustment Page | F |
| Adjustment Address | 70, 71, 72, 73 |
| Specified Value | A = 225 ± 5 mV |

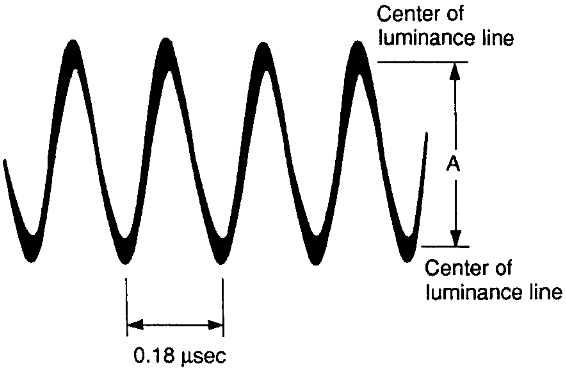


**Fig. 6-3-13.**

Adjusting method:

1) Insert a Hi8 ME tape, and set the recording mode.
2) Set data: 01 to page: 0, address: 01.
3) Note down the data of page: F, address: 76, set data: 00, and press the PAUSE button of the adjusting remote commander.
4) Note down the data of page: F, address: 77, set data: 00, and press the PAUSE button of the adjusting remote commander.
5) Input data: 00 to page: F, addresses: 70, 72, 73.
   **Note:** After setting the data, be sure to press the PAUSE button of the adjusting remote commander.
6) Change the data of page: F, address: 71, and set the REC Y signal level (A) to the specified value.
7) Press the PAUSE button of the adjusting remote commander.
8) Read the data ($D_{71}$) of page: F, address: 71.
9) Input the read data ($D_{71}$) to page: F, addresses: 70, 72, and 73.
   **Note:** After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
10) After setting the data noted down at step 3) for page: F, address: 76, press the PAUSE button of the adjusting remote commander.
11) After setting the data noted down at step 4) for page: F, address: 77, press the PAUSE button of the adjusting remote commander.
12) Set data: 00 to page: 0, address: 01.

### 8. REC C Current Adjustment (VC-177 Board)

Adjust REC chroma signal recording current.

| | |
|---|---|
| Mode | VTR recording (SP mode) |
| Signal | No signal |
| Measurement Point | CH1: Pin ⑥ of CPC of FP-379 flexible board (REC RF)<br>CH2: Pin ④ of CPC of FP-379 flexible board (RF SWP) |
| Measuring Instrument | Oscilloscope |
| Adjustment Page | F |
| Adjustment Address | 76 to 7D |
| Specified Value | A = 44.0 ± 1.6 mV |

Connection:

1) Short-circuit R1157 (82Ω, near Pin ㉒ of IC102) using a jumper wire.
2) Short-circuit R1018 (10 kΩ) using a jumper wire.
3) Short-circuit R1113 (6.8 kΩ) using a jumper wire.

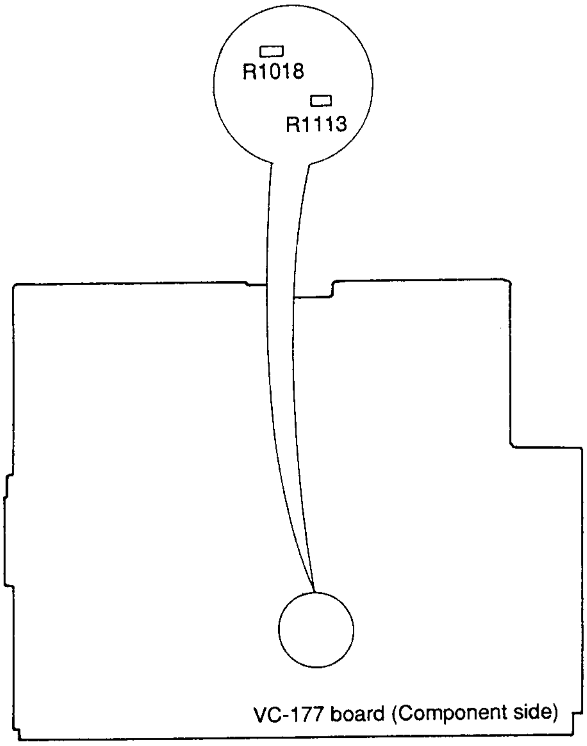


**Fig. 6-3-14.**

Adjusting method:

1) Insert a normal Hi8 ME tape, and set the recording mode.
2) Set data: 01 to page: 0, address: 01.
3) Set data: 30 to page: 2, address: 61.
4) Note down the data of page: F and address: 70, then set data: 00 and press the PAUSE button of the adjusting remote commander.
5) Note down the data of page: F and addresses: 71, 72, 73, then input data: 00 to each address.
   **Note:** After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
6) Change the data of page: F, address: 77, and set the REC chroma signal level (A) to the specified value.
7) Press the PAUSE button of the adjusting remote commander.
8) Read data (D77) of page: F, address: 77.
9) Input the read data (D77) to addresses: 76, 78, 79 of page: F.
   **Note:** After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
10) Convert D77 to a decimal number, to obtain D77′. (Refer to Table 6-1-4. Hexadecimal-Decimal Conversion Table).
11) Calculate the adjustment data (decimal) from the following equation (decimal calculation), convert it to a hexadecimal number, and input to each adjustment address.
    Address: 7A D7A′ = D77′ − 54
    Address: 7B D7B′ = D77′ − 54
    Address: 7C D7C′ = D77′ − 54
    Address: 7D D7D′ = D77′ − 54
    **Note:** After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
12) After setting the data noted down at step 4) for page: F, address: 70, press the PAUSE button of the adjusting remote commander.
13) After setting the data noted down at step 5) for page: F, address: 71, 72, 73, press the PAUSE button of the adjusting remote commander.
    **Note:** After setting each data, be sure to press the PAUSE button of the adjusting remote commander.
14) Set data: 00 to page: 2, address: 61.
15) Set data: 00 to page: 0, address: 01.

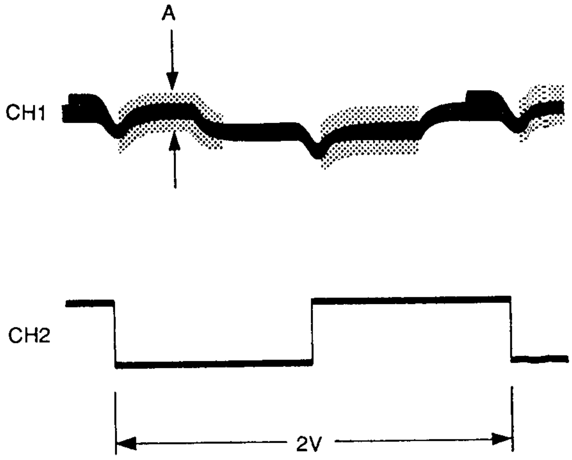


**Fig. 6-3-15.**

## 3-5. AUDIO SYSTEM ADJUSTMENT

- Perform the adjustment using the color bar signal as a video signal input for VIDEO terminal.
- The items to be adjusted for the R channel will be indicated within the [ ], in regard to the adjusting items to be adjusted for both L and R channels.
- Set the Hi-Fi sound switch in the menu display to "STEREO" position unless specified otherwise.

### Note:

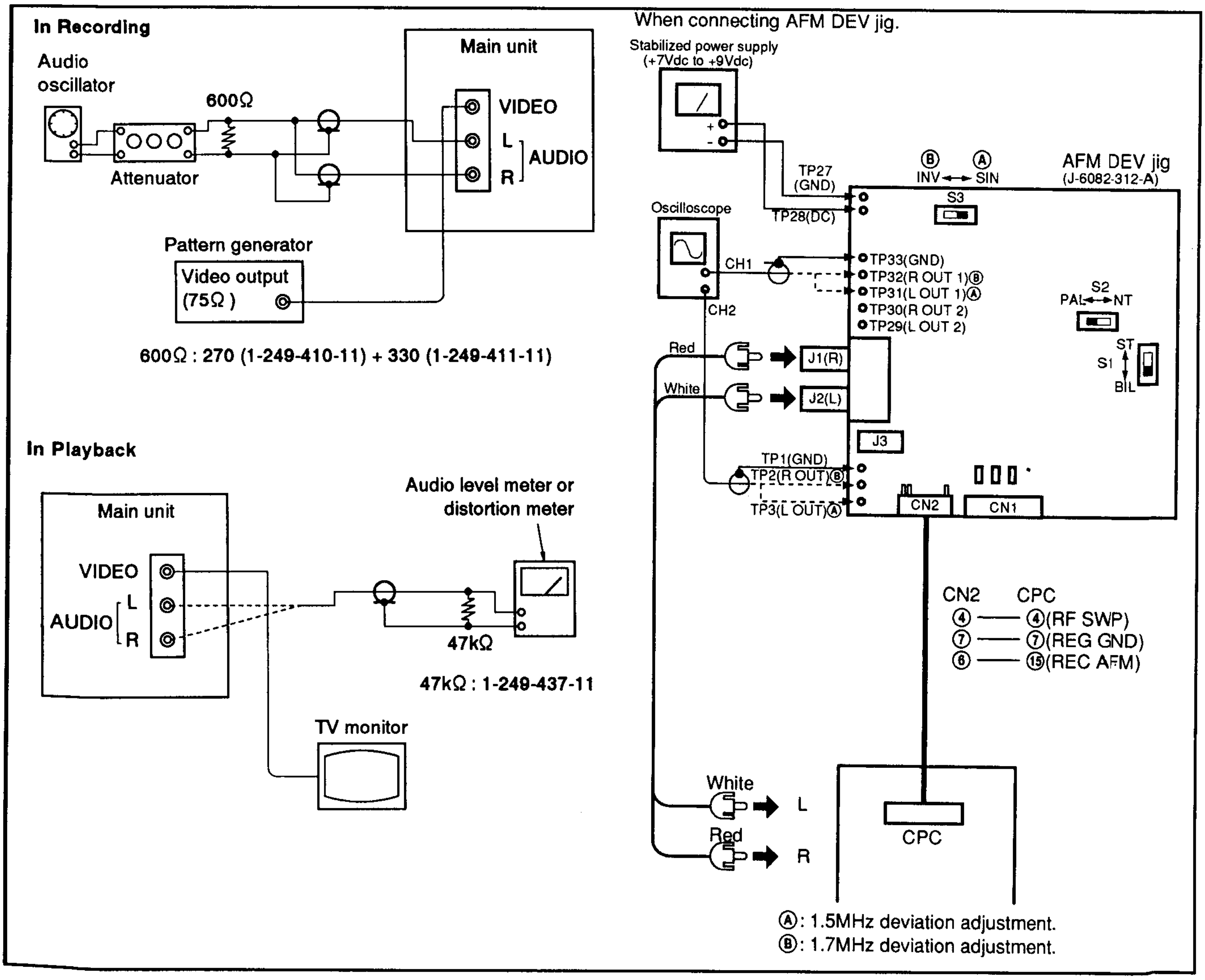
1) When inputting the audio signal, input the same signal to both the L and R channels, unless specified otherwise.
2) Be sure to insert the plug (Shorting plug or dummy plug, etc) into the AUDIO terminal (Right). If the plug is not inserted, the monaural mode well be set, and correct adjustments can not be carried out.
   [Monaural mode]
   During recording ........... REC AFM RF 1.7MHz carriear will not be output.
   During playback ............ The L+R signal will be output from the AUDIO terminal (Left).

### [Connecting the measuring instruments for the audio]

Connect the audio system measuring instruments in addition to the video system measuring instruments as shown in Fig. 6-3-16, and perform adjustments at the power switch [PLAYER or VTR] position.

### [Adjustment Procedure]

1) 1.5 MHz deviation adjustment
2) 1.7 MHz deviation adjustment
3) BPF adjustment


In Recording
Audio oscillator
600Ω
Attenuator
Main unit
VIDEO
L
R
AUDIO
Pattern generator
Video output (75Ω)
In Playback
Main unit
VIDEO
AUDIO L
R
Audio level meter or distortion meter
47kΩ
TV monitor
When connecting AFM DEV jig.
Stabilized power supply (+7Vdc to +9Vdc)
+
-
TP27 (GND)
TP28(DC)
Oscilloscope
CH1
CH2
Ⓑ Ⓐ
INV↔SIN
S3
AFM DEV jig (J-6082-312-A)
TP33(GND)
TP32(R OUT 1)Ⓑ
TP31(L OUT 1)Ⓐ
TP30(R OUT 2)
TP29(L OUT 2)
S2
PAL↔NT
ST
S1
B/L
Red
White
J1(R)
J2(L)
J3
TP1(GND)
TP2(R OUT)Ⓑ
TP3(L OUT)Ⓐ
CN2
CN1
CN2 CPC
④ — ④(RF SWP)
⑦ — ⑦(REG GND)
⑥ — ⑮(REC AFM)
White
L
Red
R
CPC

600Ω : 270 (1-249-410-11) + 330 (1-249-411-11)

47kΩ : 1-249-437-11

Ⓐ: 1.5MHz deviation adjustment.
Ⓑ: 1.7MHz deviation adjustment.

Fig. 6-3-16.

## 1. 1.5 MHz Deviation Adjustment

Sets the spectrum of the L-ch (L+R/2 signal) level modulated during recording. If deviated, the crosstalk of the audio signal will occur and the audio level will drop during both playback and recording.

| | |
|---|---|
| Mode | VTR recording |
| Signal | Input the AFM DEV jig output signal to the right and left audio input terminals (Note 1) |
| Measuring point | CH1: AFM DEV jig TP31<br>CH2: AFM DEV jig TP3 |
| Measuring device | Oscilloscope<br>ADD mode<br>CH2 INV mode |
| Adjustment page | F |
| Adjustment address | 5E |
| Specified value | The difference between CH1 signal and CH2 signal should be minimum. |

Connection:

1) Connect CN2 of the AFM DEV jig to CPC of the FP-379 flexible board.
2) Connect the audio output terminal (J1 and J2) of the AFM DEV jig to AUDIO terminal of the unit.
3) Connect TP28 (DC), TP27 (GND) of the AFM DEV jig to the DC power supply (+7 Vdc to +9 Vdc).
4) Set the AFM DEV jig switches to the following positions.
   S1 ............ BIL position
   S2 ............ PAL position
   S3 ............ SIN position

Adjustment Method:

1) Match the vertical ranges of CH1 and CH2 of the oscilloscope to each other.
2) Set the oscilloscope to the ADD mode and CH2 to the INV (inverse) mode.
3) Set data: 01 to page: 0, address: 01.
4) Change the data of page: F, address: 5E and minimize the audio signal level difference (A).
5) Press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

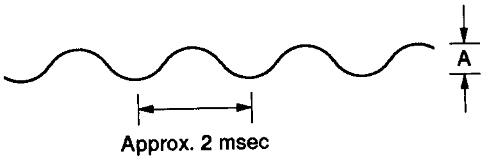


Fig. 6-3-17.

## 2. 1.7 MHz Deviation Adjustment

Sets the spectrum of the R-ch (L–R/2 signal) level modulated during recording. If deviated, the crosstalk of the audio signal will occur and the audio level will drop during both playback and recording.

| | |
|---|---|
| Mode | VTR recording |
| Signal | Input the AFM DEV jig output signal to the right and left audio input terminals |
| Measuring point | CH1: AFM DEV jig TP32<br>CH2: AFM DEV jig TP2 |
| Measuring device | Oscilloscope<br>ADD mode<br>CH2 INV mode |
| Adjustment page | F |
| Adjustment address | 5F |
| Specified value | The difference between CH1 signal and CH2 signal should be minimum. |

Connection:

1) Connect CN2 of the AFM DEV jig to CPC of the FP-379 flexible board.
2) Connect the audio output terminal (J1 and J2) of the AFM DEV jig to AUDIO terminal of the unit.
3) Connect TP28 (DC), TP27 (GND) of the AFM DEV jig to the DC power supply (+7 to +9 Vdc).
4) Set the AFM DEV jig switches to the following positions.
   S1 ............ BIL position
   S2 ............ PAL position
   S3 ............ INV position

Adjustment Method:

1) Match the vertical ranges of CH1 and CH2 of the oscilloscope to each other.
2) Set the oscilloscope to the ADD mode and CH2 to the INV (inverse) mode.
3) Set data: 01 to page: 0, address: 01.
4) Change the data of page: F, address: 5F and minimize the audio signal level difference (A).
5) Press the PAUSE button of the adjusting remote commander.
6) Set data: 00 to page: 0, address: 01.

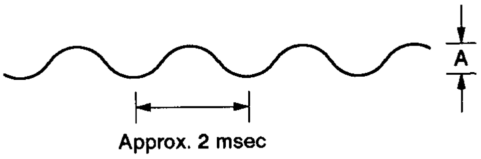


Fig. 6-3-18.

### 3. BPF f0 Adjustment

Sets the BPF passing frequency so that the AFM signal can separate from the playback RF signal properly. If deviated. the mono/stereo mode will be differentiated incorrectly, and noises and distortions will increase during high volume playback.

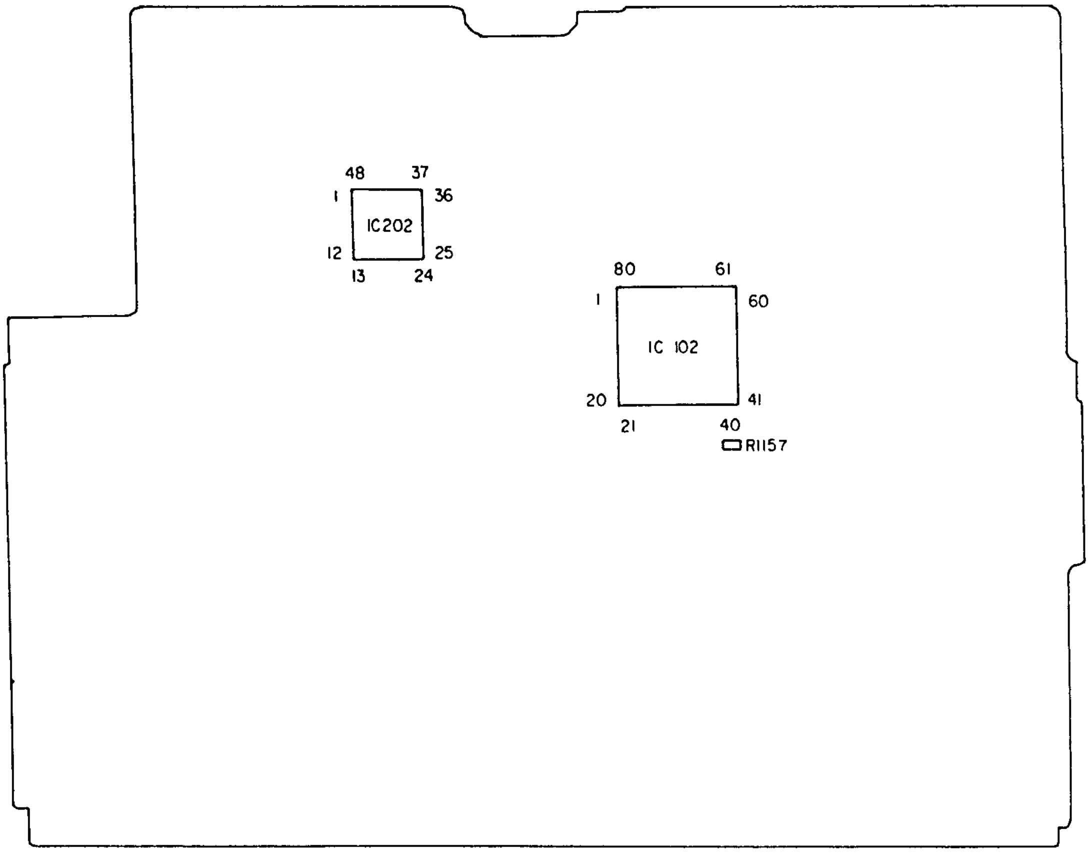
| Mode | Playback |
|---|---|
| Signal | Alignment tape:<br>For BPF adjustment<br>(WR5-11CS) |
| Measuring point | Right or left audio output terminal |
| Measuring device | Distortion meter |
| Adjustment page | F |
| Adjustment address | 60 |
| Specified value | The right and left channel distortion rates should be almost the same (within ± 1%) and minimum |

Adjustment Method:

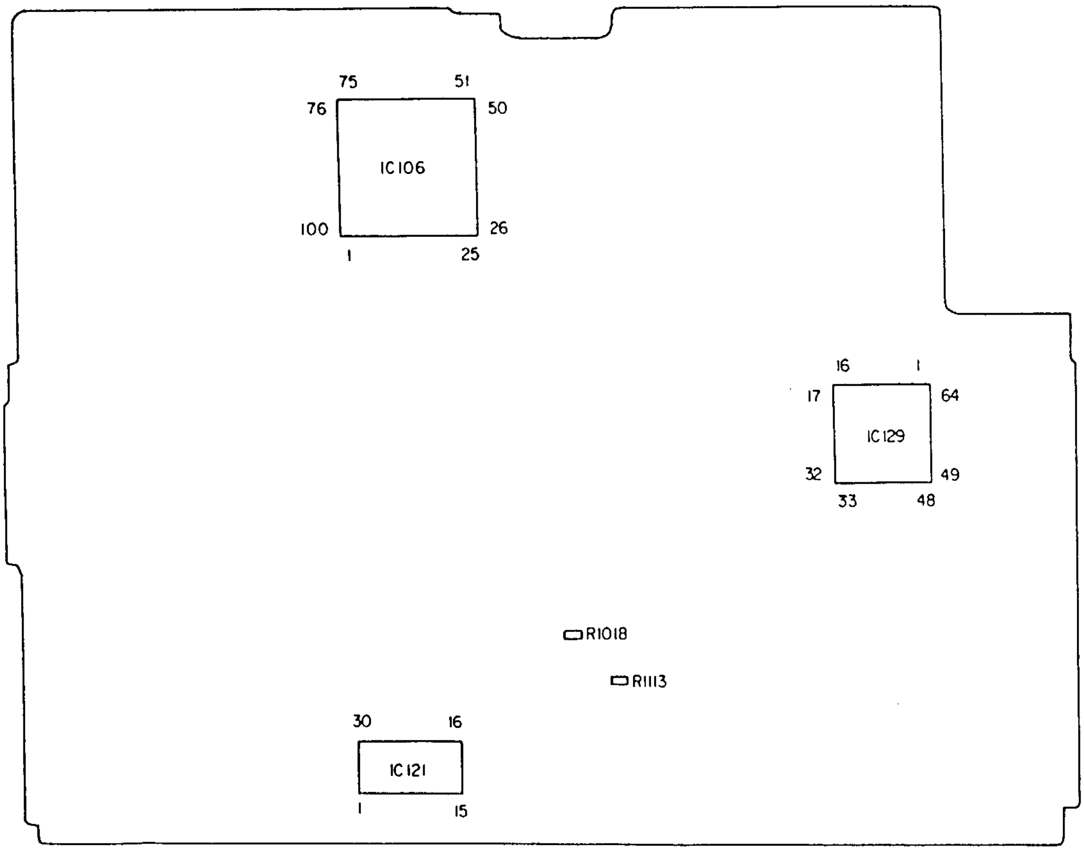
1) Set data: 01 to page: 0, address: 01.
2) Set the Hi-Fi sound switch (menu display) to " $\boxed{2}$ ".
3) Change the data of page: F, address: 60 and minimize the distortion rate.
4) Press the PAUSE button of the adjusting remote commander.
5) Set the Hi-Fi sound switch to " $\boxed{1}$ ".
6) Change the data of page: F, address: 60 and minimize the distortion rate.
7) Press the PAUSE button of the adjusting remote commander.
8) Repeat steps 2) to 7) and set the data of address: 60 so that the distortions rates when the Hi-Fi sound switch is set to " $\boxed{2}$ " and set to " $\boxed{1}$ " respectively are almost the same and minimum.
9) Press the PAUSE button of the adjusting remote commander.
10) Set data: 00 to page: 0, address: 01.
11) Set the Hi-Fi sound switch to "STEREO".

## 3-6. ARRANGEMENT DIAGRAM FOR ADJUSTMENT PARTS

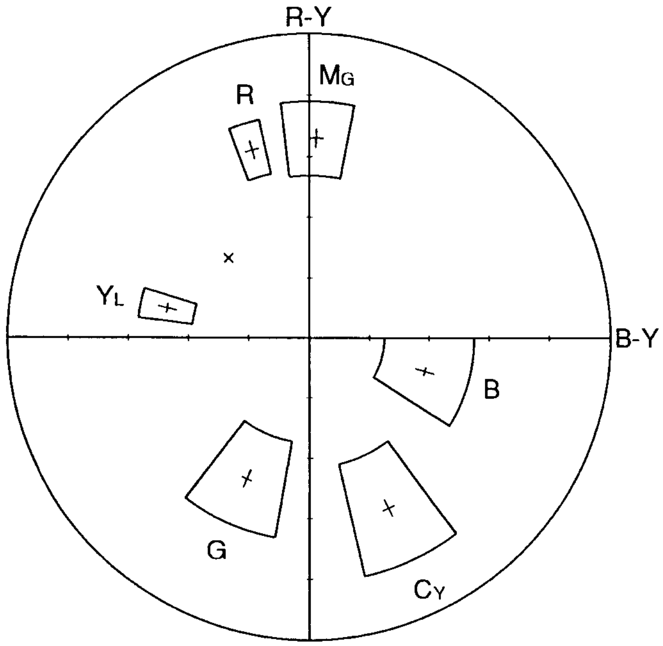
### VC-177 BOARD (COMPONENT SIDE)


48
37
1
36
IC202
12
25
13
24
80
61
1
60
IC 102
20
41
21
40
R1157

### VC-177 BOARD (CONDUCTOR SIDE)


75
51
76
50
IC106
100
26
1
25
16
1
17
64
IC129
32
49
33
48
R1018
R1113
30
16
IC121
1
15

## FOR CAMERA COLOR REPRODUCTION ADJUSTMENT

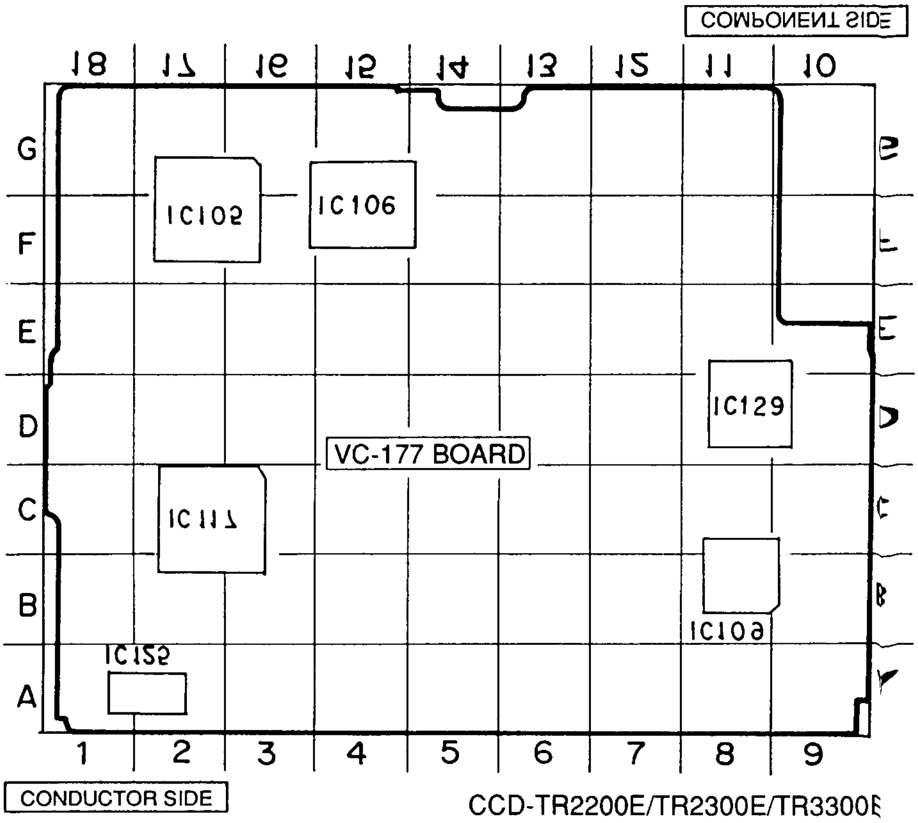

R-Y
MG
R
YL
B-Y
B
G
CY

CCD-TR2200E/TR2300E/TR3300E

Take a copy CAMERA COLOR REPRODUCTION FRAME with a clear sheet for use.

### <PARTS REFERENCE SHEET>

You can find the parts position of mount locations applying to boards of a set.


COMPONENT SIDE
18
17
16
15
14
13
12
11
10
G
F
E
D
C
B
A
IC105
IC106
IC129
VC-177 BOARD
IC117
IC109
IC125
1
2
3
4
5
6
7
8
9
CONDUCTOR SIDE

CCD-TR2200E/TR2300E/TR3300

# CCD-TR2200E/TR2300E/TR3300E

## RMT-715/716

SONY

# SERVICE MANUAL

AEP Model
UK Model
CCD-TR2200E/TR3300E
E Model
CCD-TR2300E/TR3300E
Australian Model
CCD-TR3300E
Hong Kong Model
Tourist Model
CCD-TR2300E

## CORRECTION-1

Please correct your Service Manual
(96-035)

## SECTION 6 ADJUSTMENT

☞ : indicated additional portion

☞ : indicated changed portion

Page 6–15

### 5. Flange Back Adjustment

The inner focus lens flange back adjustment is carried out automatically. If it is not adjusted correctly, it will be out of focus during auto focusing/ manual focusing.

### 5-1. Flange Back Adjustment (1)

Adjusting method:

| | |
|---|---|
| Subject | Flange back adjustment chart (1988mm from the front of the protection glass)<br>(Luminance: 200 ± 50 lux) |
| Measurement Point | Check operations on TV monitor |
| Measuring Instrument | |
| Adjustment Page | F |
| Adjustment Address | 2E to 33, 49 to 4D |

1) Check that at both the zoom lens TELE terminal and WIDE terminal, the center of the chart for the flange back adjustment and center of the exposure screen coincide.
2) Set data: 01 to page: 0, address: 01.
3) Check that the data of page: F, address: 2E to 33, 49 to 4D is the initial value (see table below).

| Address | Data | Address | Data |
|---|---|---|---|
| 2E | 18 | 49 | 2D |
| 2F | 1B | 4A | 00 |
| 30 | C8 | 4B | 00 |
| 31 | 24 | 4C | 00 |
| 32 | E3 | 4D | 16 |
| 33 | 15 | | |

4) Check that the data of page: 2, address: 02 is 00.
5) Set data: 13 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 15 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
(The adjustment data will be automatically input to page: F, address: 2E to 33, 49 to 4D.)
7) Check that the data of page: 2, address: 02 is "01".

Processing after Completing Adjustments
1) Turn OFF the main power supply (8.4V)
2) Perform "Flange Back Adjustment (2)".

Page 6–16

### 5-2. Flange Back Adjustment (2)

Perform this adjustment after performing "Flange Back Adjustment (1)".

| | |
|---|---|
| Subject | Subject more than 500m away (Subjects with clear contrast such as buildings, etc.) |
| Adjustment Page | F |
| Adjustment Address | 2E to 33, 49 to 4D |

Adjusting Method:

1) Set the IRIS to open. (Use a ND filter)
2) Set the zoom lens to the TELE end and expose a subject that is more than 500 m away (subjects with clear contrast such as buildings, etc.). (Nearby subjects less than 500 m away should not be in the screen.)
3) Set data: 01 to page: 0, address: 01.
4) Check that the data of page: 2, address: 02 is "00".
5) Set data: 13 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
6) Set data: 29 to page: 2, address: 01, and press the PAUSE button of the adjusting remote commander.
   (Adjustment data will automatically be input to page: F, addresses: 2E to 33, 49 to 4D.)
7) Check that the data of page: 2, address: 02 is "01".

Processing after Completing Adjustments

1) Set data: 00 to page: 0, address: 01.
2) Turn OFF the main power supply (8.4V).
3) Perform "Flange Back Check".

Sony Corporation
Personal A&V Products Company

96[illegible]75-1
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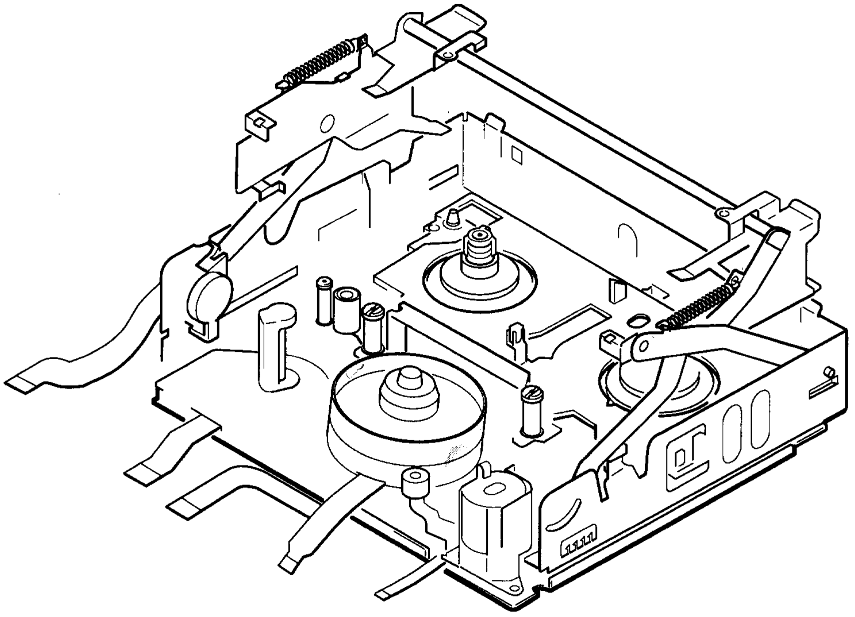
Published by Quality Engineering Dept.
(Osaki East)

# 8mm Video MECHANICAL ADJUSTMENT MANUAL VII

## B MECHANISM

**Video8**

Use this mechanical adjustment manual VII together with the service manual of the respective models.



**8 MECHANISM DECK**

**SONY®**

MICROFILM

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For the mode selector operation, schematic diagram and parts list, refer to the Supplement-1 Manual.

# 1. PREPARATION FOR CHECKING, ADJUSTING AND REPLACING THE MECHANISM

For the disassembly procedures of the cabinet and printed wiring boards, please refer to the "DISASSEMBLY" section of the service manual of the respective models.

To re-assemble the mechanical parts which are disassembled in the following sections, perform the disassembly steps in reverse, unless otherwise specified.

The mechanisms are adjusted while set in the USE mode of operation. (Refer to the "Mode Selector Operation Procedure of the Supplement-1 Manual for how to enter the USE mode.)

## 1-1. Cassette Compartment Block Assy

### 1. Disassembly Procedure (Refer to Fig. 1.)

1) Set the mechanism to USE mode.
2) Confirm that the Cassette Compartment Block Assy is opened. If it is not opened, open it referring to Fig. a.
3) Remove the claws Ⓐ and Ⓑ of the Damper Assy ① from the chassis.
4) Remove the washer ② from the shaft of the Cassette Compartment near the Drum, next to the loading motor. Remove the shaft of the arm from the slot.
5) Remove the shaft of the arm from the slot Ⓒ of the Cassette Compartment near the Drum, next to the capstan motor. (Refer to Fig. b)
6) Lift up the Cassette Compartment at the Drum side in the direction of the arrow Ⓓ, and remove the arm shaft of the Cassette Compartment from the LS Chassis ④ near the Reel Tables. Remove the Cassette Compartment Assy ③ in the direction of the arrow Ⓔ.

### 2. Precautions During Re-Assembling

1) After attaching the Tension Spring, confirm that the straight portion at the end of the curved hook of the spring is positioned inside the mechanism. (Refer to Fig. c)
2) Confirm that the claw in the bottom of the shaft near the Reel Table of the Cassette Compartment is hooked to the LS Chassis.
3) Confirm that the claw of the Damper Assy is hooked to the LS Chassis. (Refer to Fig. b)

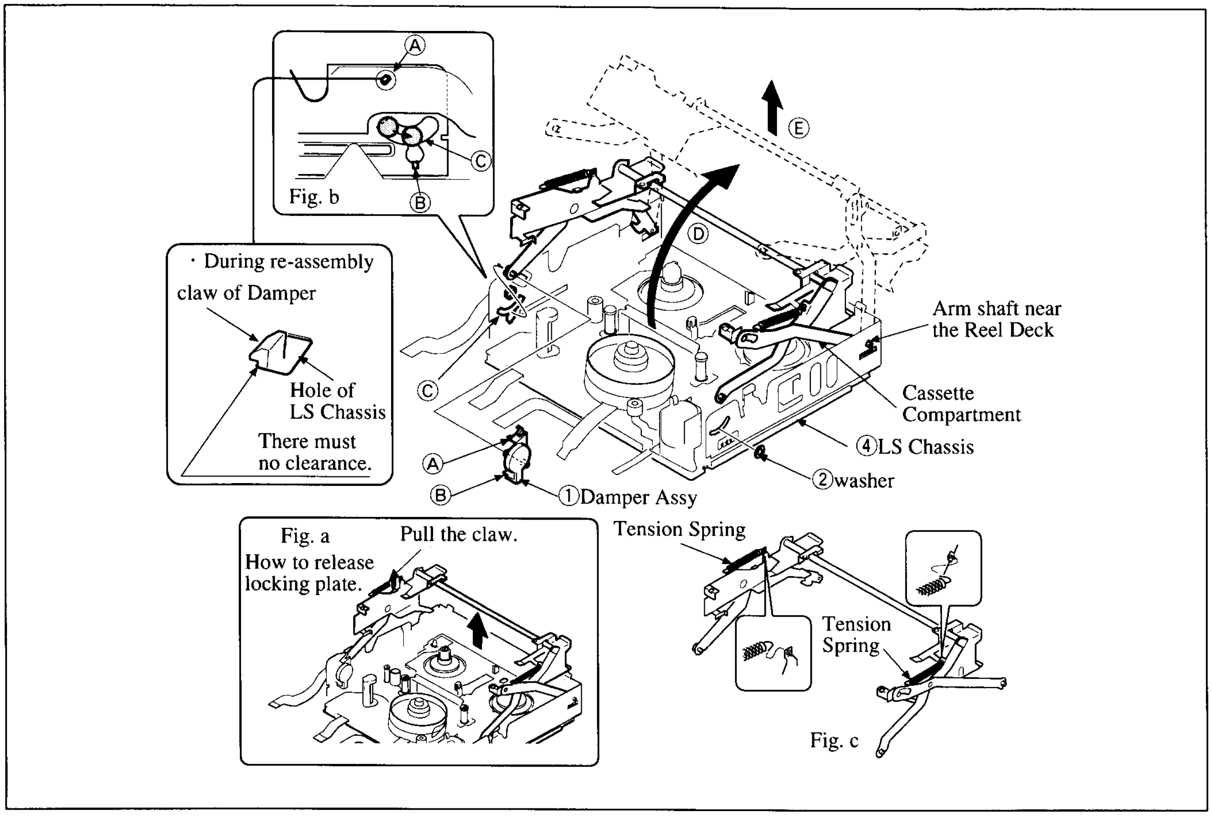

Ⓐ
Ⓒ
Fig. b
Ⓑ
Ⓔ
Ⓓ
· During re-assembly
claw of Damper
Hole of
LS Chassis
There must
no clearance.
Arm shaft near
the Reel Deck
Ⓒ
Cassette
Compartment
④LS Chassis
Ⓐ
②washer
Ⓑ
①Damper Assy
Fig. a
Pull the claw.
How to release
locking plate.
Tension Spring
Tension
Spring
Fig. c

Fig. 1

## 1-2. How to Operate the Mechanism with the Cassette Compartment Block Assy Removed

### 1. How to load a cassette tape (Refer to Fig. 2):

1) While referring to section "DISASSEMBLY" of the respective service manual, turn the main power on with the cabinet and camera section removed. (It enables to operate the mechanical deck.)
2) Connect the adjustment remote commander (Ref. No. J-10) and establish the TEST mode.

> Example of establishing the TEST mode: model CCD-TR420E/TR440E.
> Select page: 6, address: 00, set data :01 and press the PAUSE button to release protection.
> Select page: 7, address: 01, set data: 01 and press the PAUSE button.
> After tape loading or other desired operations of mechanism are completed, be sure to perform the following:
> Select page: F, address: 01, set data :00 and press the PAUSE button.
> Select page: 6, address: 00, set data: 00 and press the PAUSE button.

3) Press the push-switch ① knob in the direction of the arrow which sets the machine into loading mode.

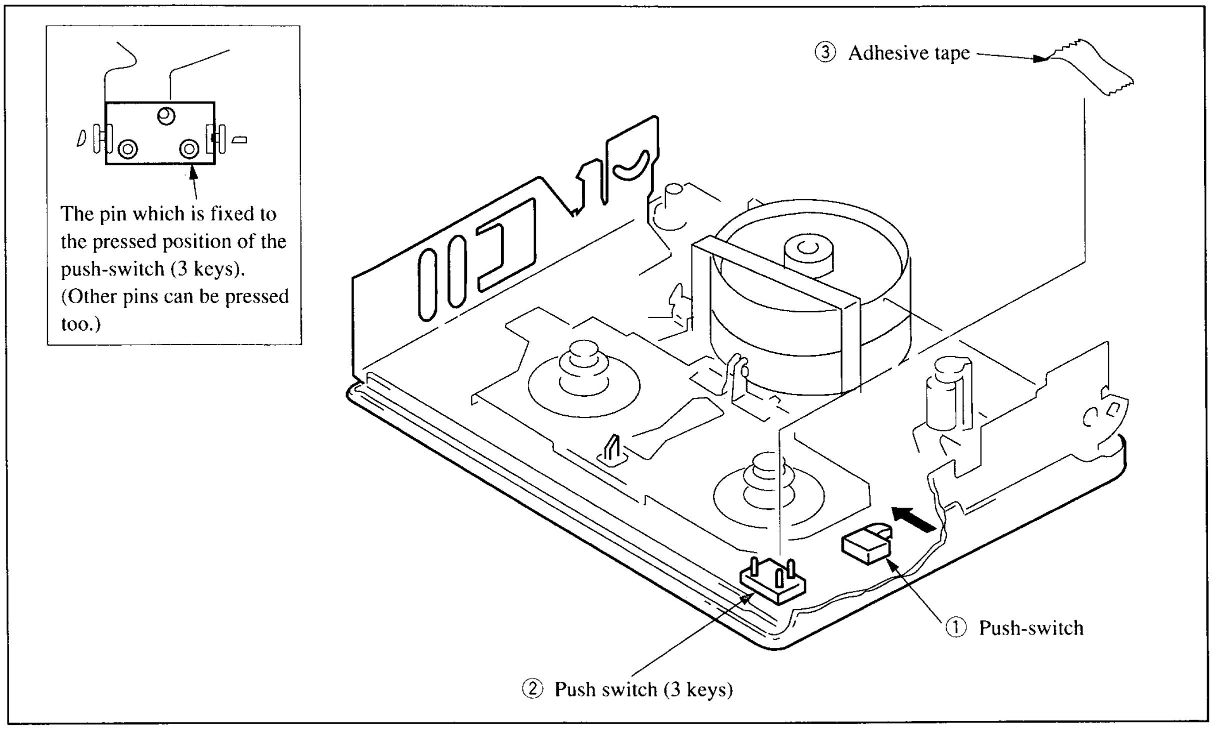
☆ PB, FF/REW and CUE/REV operations are possible.

### 2. How to establish RECORD mode:

1) Press pin of the push-switch ② (ON state) and keep the ON state by fixing with adhesive tape ③.
2) Turn the main power switch ON (select VTR or CAMERA position of in case of camera).
3) Set the RECORD switch to ON.
(When the TEST mode is selected, the rotation detection of the S and T reel tables is muted, and the top end sensor is disable which allow to run the tape.)

### 3. How to eject a cassette tape:

1) Press the EJECT switch to ON.



The pin which is fixed to the pressed position of the push-switch (3 keys). (Other pins can be pressed too.)

Fig. 2

# 2. PERIODIC CHECK AND MAINTENANCE ITEMS

- Perform the following periodic check and maintenance to ensure that the machine functions continue to operate in peak condition, and to protect the tape and mechanism deck. After completing repair work, perform the following maintenance items regardless of how long the user's machine has been used.

## 2-1. Rotary Drum Assy Cleaning

Press the cleaning piece (Ref. No. J-2) moistened with cleaning fluid (Ref. No. J-1) lightly on the Rotary Drum Assy. Gently turn the Rotary Drum Assy slowly by hand counter-clockwise to clean the rotary drum.

Caution: Never attempt to turn the head drum motor by turning the main power ON. Also, never turn the drum clockwise by hand. In addition, never move the cleaning piece vertically with respect to the head tips, since this will damage them. Never clean the head drum in any way other than as described above.

## 2-2. Tape Path Cleaning (Refer to Fig. 3.)

1) Set the mechanism to USE mode. Clean the tape path system (TG-1, TG-2, TG-3, TG-4, pinch roller, capstan shaft) and lower drum using a very thin cotton swab (Ref. No. J-3) moistened with cleaning fluid.

Caution: Take care that the very thin cotton swab (Ref. No. J-3) does not touch the oil or grease of the various link mechanisms.

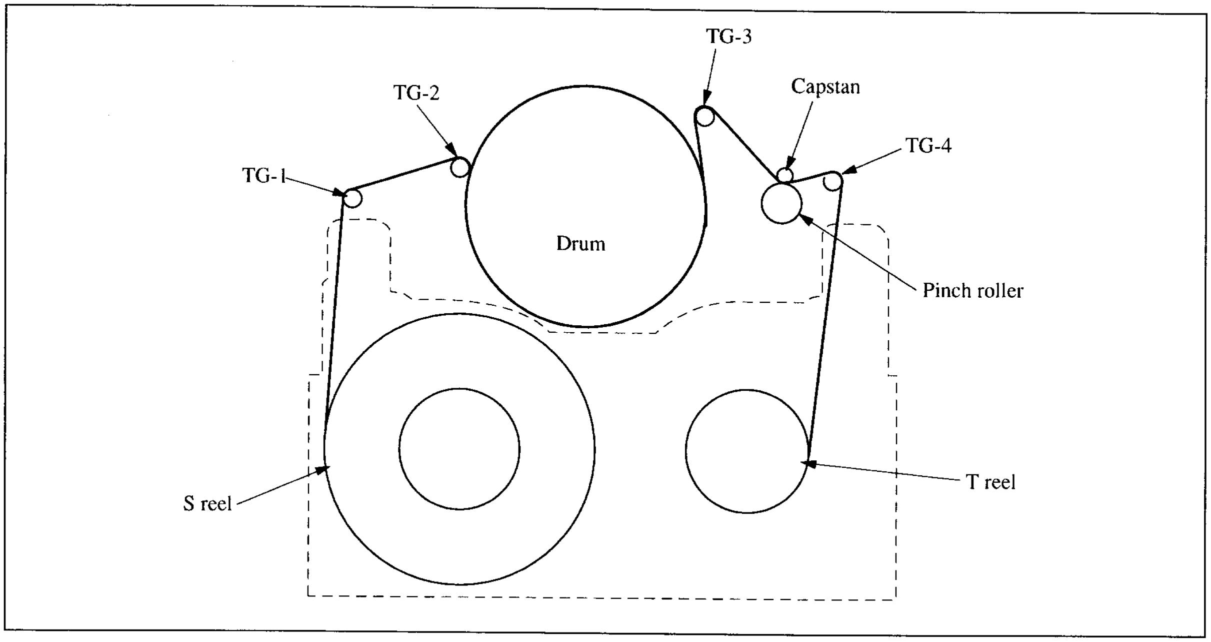


Fig. 3

## 2-3. Periodic Check Items

| | Maintenance and Inspection Points | Operating Hours | | | | | | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 500 | 1000 | 1500 | 2000 | 2500 | 3000 | 3500 | 4000 | 4500 | 5000 | |
| | Cleaning of tape running surface | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Take care not to get oily. |
| | Cleaning and degaussing of Rotary Drum Assy | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | Take care not to get oily. |
| Drive System | Timing Belt | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | 3-965-546-01 |
| | Capstan Shaft | — | ◎ | — | ◎ | — | ◎ | — | ◎ | — | ◎ | Take great care not to let any oil contact the tape running surface. |
| | Change Gear Shaft<br>Relay Pulley Shaft | — | ◎ | — | ◎ | — | ◎ | — | ◎ | — | ◎ | |
| | Loading Motor | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | X-3945-401-1 |
| Performance Check | Abnormal Sound | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | ☆ | |
| | Tape Hold-back Tension Measurement | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |
| | Brake System | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |
| | FWD<br>RVS } Torque Measurement | — | ☆ | — | ☆ | — | ☆ | — | ☆ | — | ☆ | |

○Cleaning ◎Lubrication ☆Check

Note: When overhauling the machine, replace the parts while referring to the above table.

Note: Regarding oil

- Be sure to use the specified oil. (If the viscosity and other characteristics are different, various troubles may arise.)
  Oil: Sony part No. 7-661-018-18
  (Mitsubishi diamond oil hydro fluid NT-68)
- For the oil lubricated bearings, use oil free from dust or foreign materials. If the oil contains any dust or foreign material, the bearings will wear out quickly or burn out.
- One drop of oil is the amount of oil which forms at the tip of a stick of 2 mm diameter.

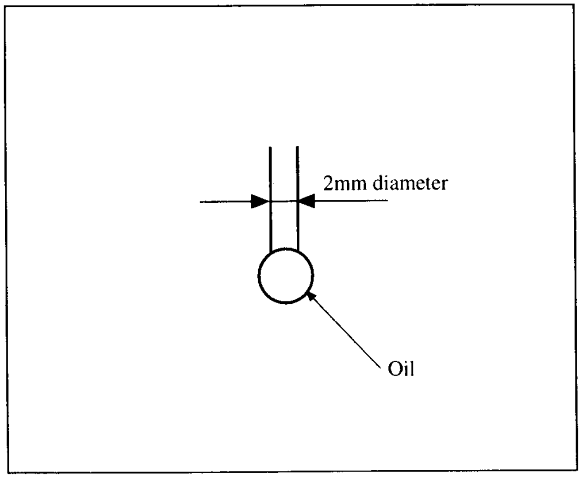


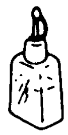
Fig. 4

## 2-4. Service Tool List

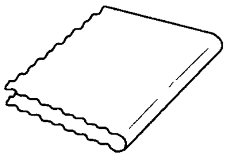
| Ref. No. | Name | Parts Code | Tool Stamp | Applications |
|---|---|---|---|---|
| J-1 | Cleaning fluid | Y-2031-001-0 | —— | |
| J-2 | Cleaning piece | 2-034-697-00 | —— | |
| J-3 | Very thin cotton swab (made by Nippon Cotton Swab Inc. (P752D)) | | —— | |
| J-4 | Head demagnetizer | Commercially available | —— | |
| J-5 | Dental mirror<br>Spare mirror | J-6080-029-A<br>J-6080-030-1 | SL-5052 | Tape path |
| J-6 | Alignment tape (NTSC : WR5-1NP)<br>Alignment tape (PAL : WR5-1CP) | 8-967-995-02<br>8-967-995-07 | —— | Tape path |
| J-7 | FWD/RVS take-up torque cassette | J-6080-824A | GD-2086 | |
| J-8 | Screwdriver for tape path adjustment | J-6082-026-A | —— | For tape guide adjustment |
| J-9 | FWD/BACK tension adjustment screwdriver | J-6082-187-A | —— | |
| J-10 | Remote commander for adjustment | J-6082-053-B | —— | Tape path (Setting PATH mode) |
| J-11 | MD process table | J-6082-166-A | —— | |
| J-12 | FLOIL Grease SG-941 | 7-662-001-39 | —— | |
| J-13 | FLOIL Grease SG-055G | 7-651-000-09 | —— | |

Other equipment
- Oscilloscope
- Analog circuit tester (input impedance 20 kΩ)

J-1



J-2



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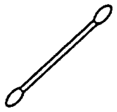

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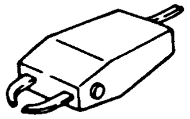

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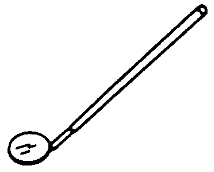

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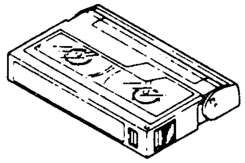
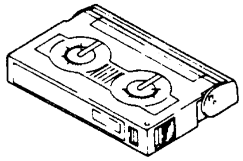


J-7



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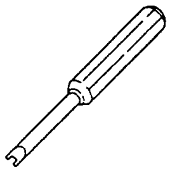
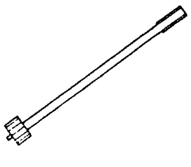


J-9



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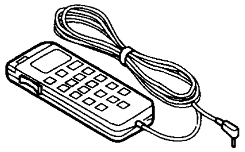
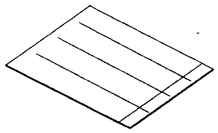
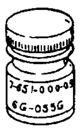


J-11



J-12

J-13



# 3. CHECKING, ADJUSTING AND REPLACING THE MECHANISM

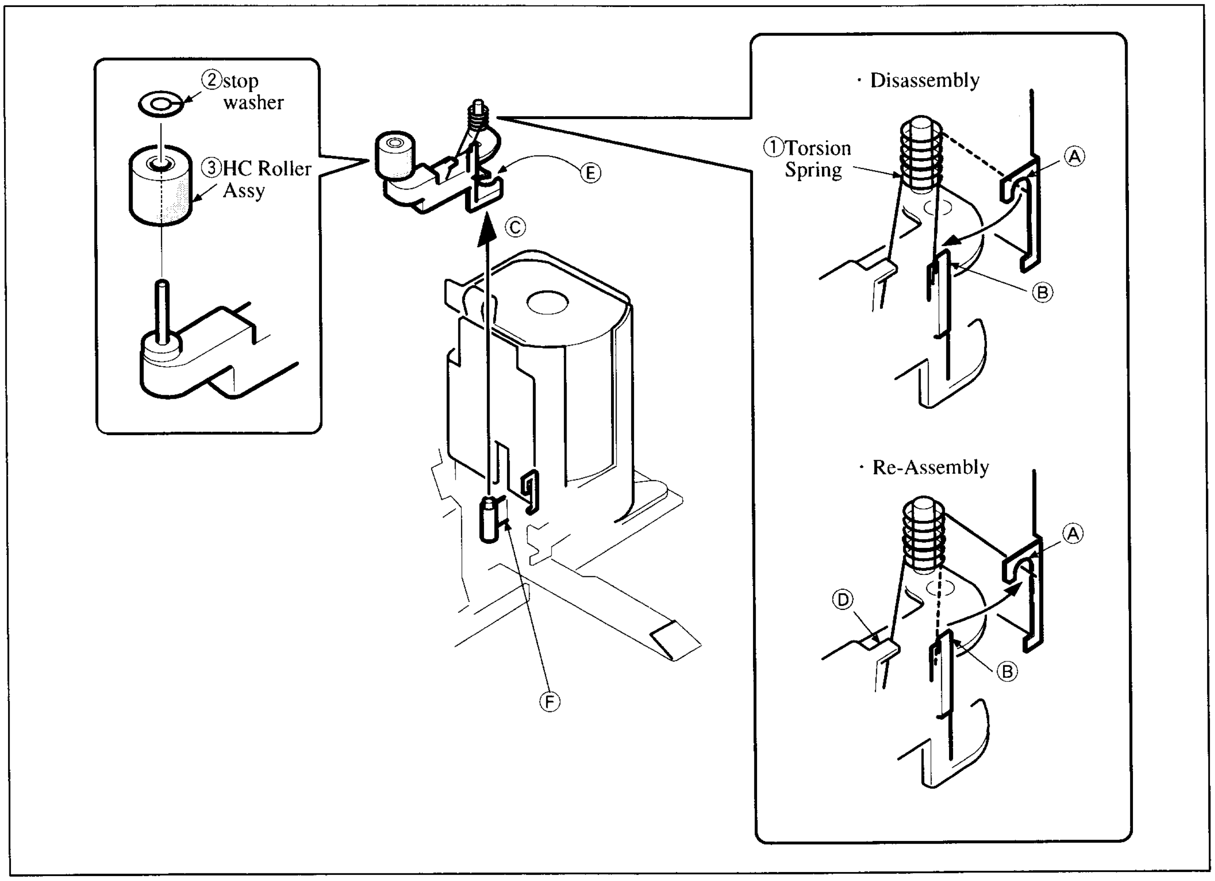
## 3-1. HC Roller Block Assy (Refer to Fig. 5)

### 1. Disassembly Procedure

1) Remove the Torsion Spring ① from the cut-out Ⓐ of the motor holder. Hook it to the claw Ⓑ of the HC Arm.
2) Remove the HC Roller Block Assy in the direction shown by Ⓒ.
3) Remove the stop washer ② and remove the HC Roller Block Assy ③.

### 2. Precautions During Re-Assembly

1) After attaching the HC Roller Block Assy, confirm that both ends of the torsion spring are hooked to Ⓐ and Ⓓ.
2) Align the block so that the cut-out Ⓔ agrees with the rib Ⓕ.



②stop washer
③HC Roller Assy
Ⓔ
Ⓒ
Ⓕ
· Disassembly
①Torsion Spring
Ⓐ
Ⓑ
· Re-Assembly
Ⓓ
Ⓐ
Ⓑ

Fig. 5

## 3-2. Drum Assy (Refer to Fig. 6)

### 1. Disassembly Procedure

1) Set the mechanism to USE mode.
2) Remove the three screws (M 1.4) ① and remove the Drum Assy ②.

Caution: Be careful not to touch the outer circumference of the drum. (Hold the portions Ⓐ and Ⓑ of the drum assy.)

### 2. Precautions During Re-Assembly

1) Be careful not to touch the outer circumference of the drum. (Hold the portions Ⓐ and Ⓑ of the drum assy.)
2) When tightening the three screws (M 1.4), tighten them in the order Ⓒ, then Ⓓ, then Ⓔ.
3) After attaching the Drum Assy, perform the steps in section "4. TAPE PATH ADJUSTMENT".

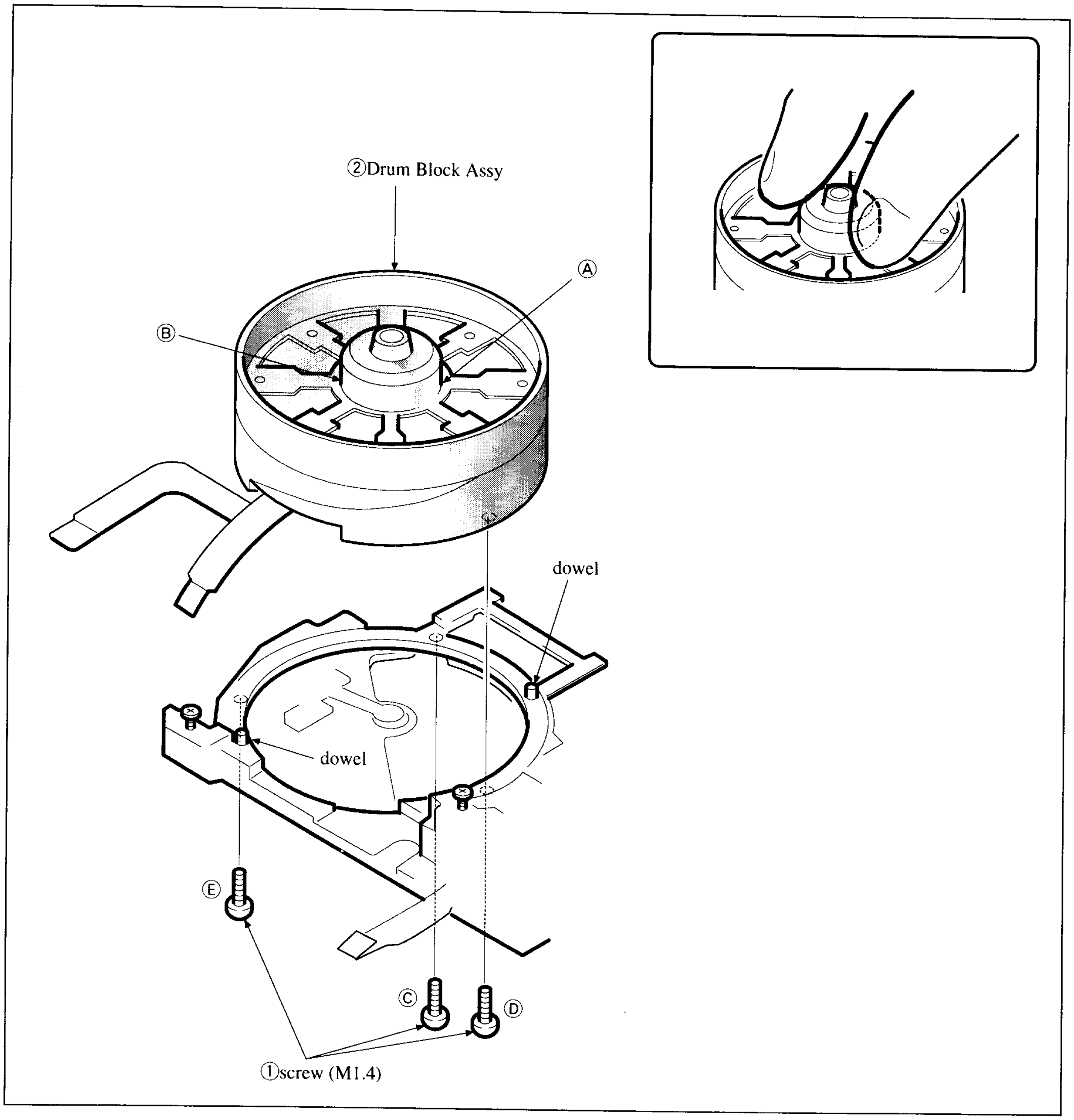


Fig. 6

## 3-3. Drum Base Block Assy, Shaft Ground (Refer to Fig. 7)

### 1. Disassembly Procedure

1) Remove the Drum Assy referring to section 3-2.
2) Remove the three screws (M 1.4×2.5) ① and remove the Drum Base Block Assy ②.
3) Remove the screw (M 1.7×1.4 ) ③ and remove the Shaft Ground ④.

Caution 1: Do not hold the spring portion of the Shaft Ground ④.

Caution 2: The loading motor can be removed while the mechanism is in this state. However, do not move any other mechanical parts (especially gears and cams around the rotary switch) when removing the loading motor. (Refer to 3-11.)

### 2. Precautions During Re-Assembly

1) Do not touch the spring portion of the Shaft Ground ④.
2) When tightening the three screws (M 1.4×2.5), tighten them in the order of Ⓐ, then Ⓑ, then Ⓒ.
3) After re-assembly is completed, perform the steps in section "4. TAPE PATH ADJUSTMENT".

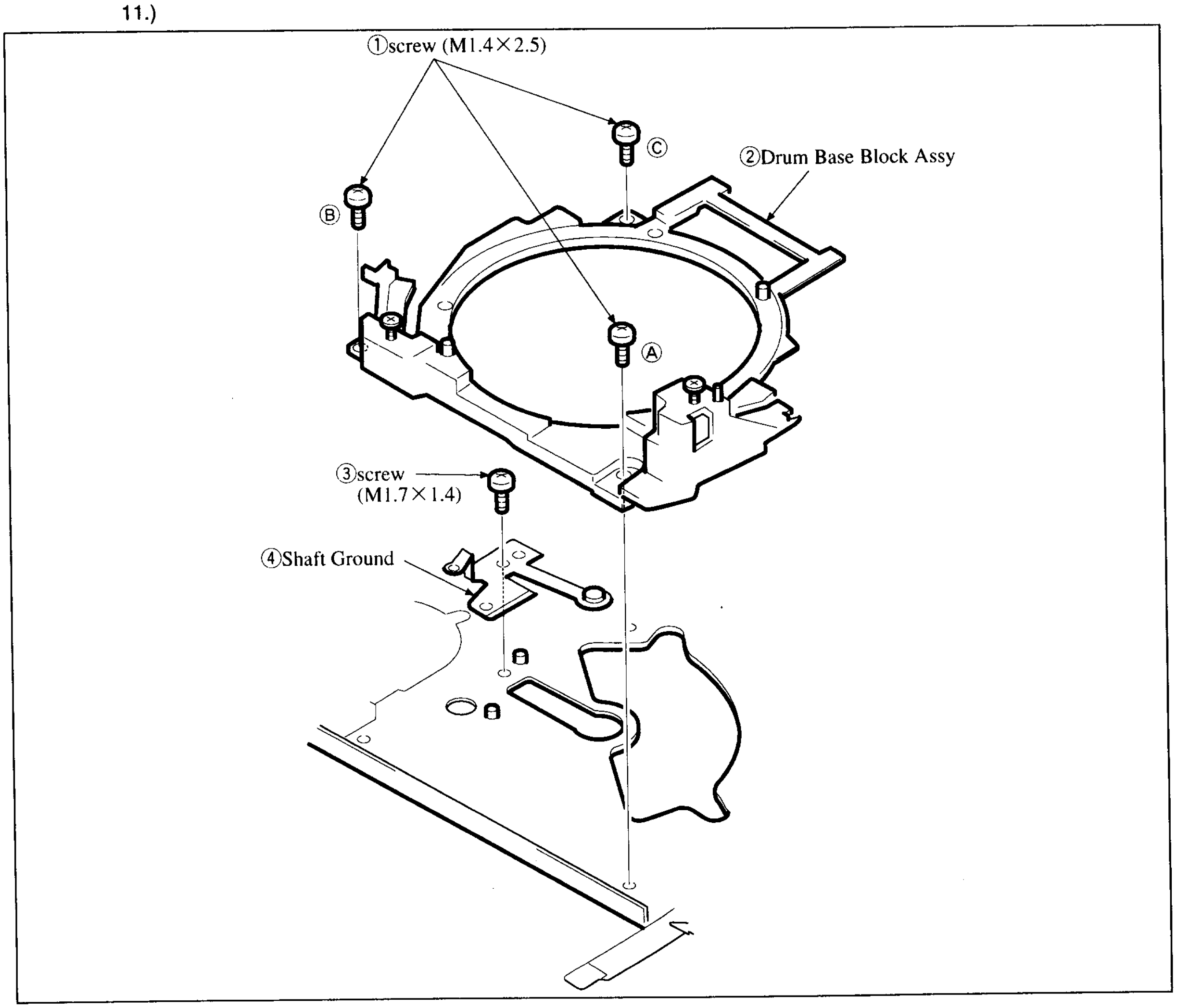


Fig. 7

## 3-4. Gooseneck Retainer, Gooseneck Gear Assy (Refer to Fig. 8)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the LED ① from the LED holder of the Gooseneck Retainer ③.
(Turn the flexible board 90° outside and remove it upward.)
3) Remove the three screws (M 1.4×2.5) ② and remove the Gooseneck Retainer ③.
4) Remove the stop washer ④ and remove the Gooseneck Gear Assy ⑤.

### 2. Precautions During Re-Assembly

1) When attaching the Gooseneck Retainer ③, take care that the Gooseneck Retainer ③ does not collide with the tension regulator band. (The tension regulator band must be located inside.)
2) Hook the T-side claw on the guide.

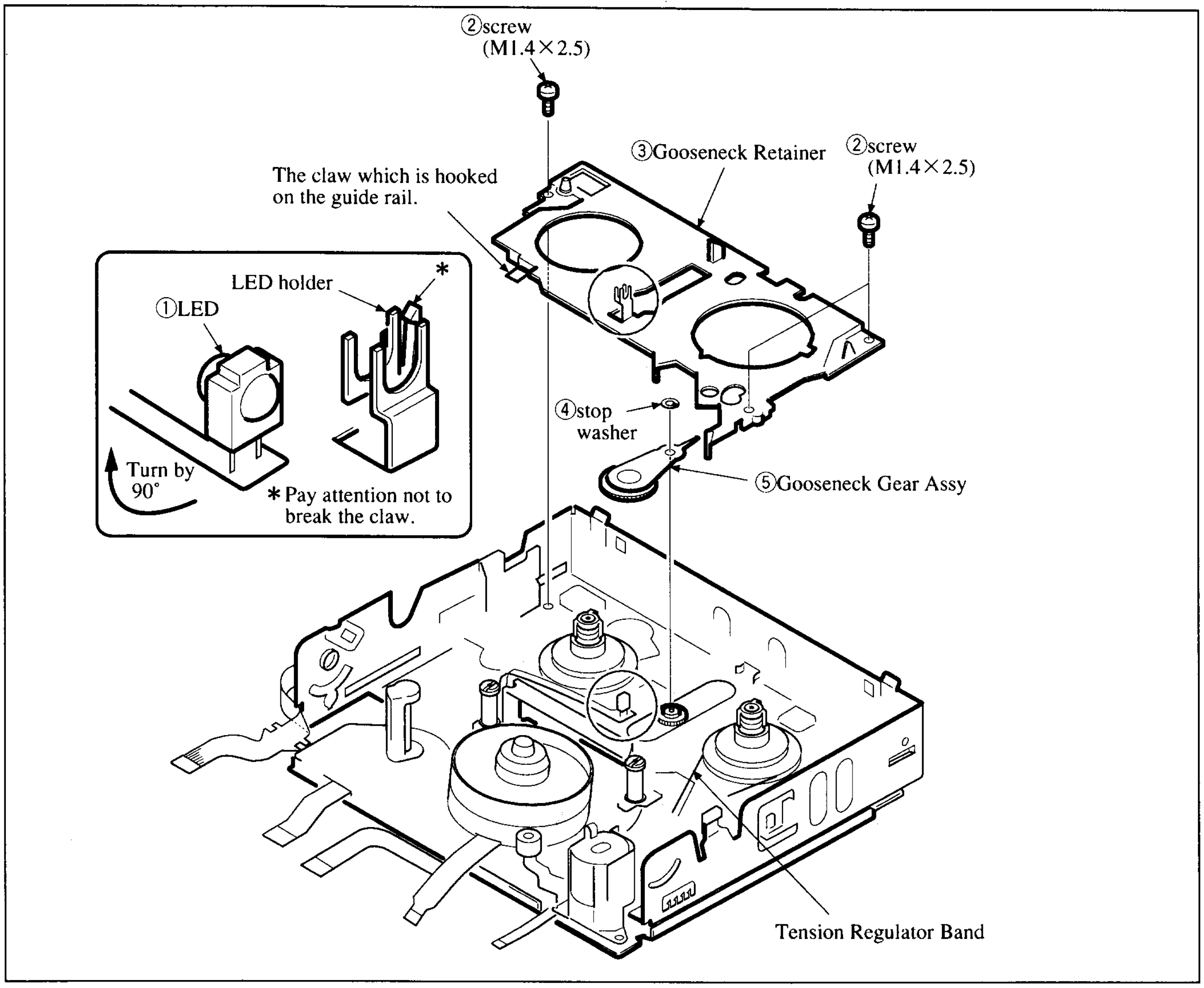

②screw
(M1.4×2.5)
③Gooseneck Retainer
②screw
(M1.4×2.5)
The claw which is hooked on the guide rail.
LED holder
*
①LED
Turn by 90°
* Pay attention not to break the claw.
④stop washer
⑤Gooseneck Gear Assy
Tension Regulator Band

Fig. 8

## 3-5. LS Chassis Block Assy, Mechanical Chassis Block Assy (Refer to Fig. 9)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the FP-221 flexible board ① from the flexible board holder.
4) Remove the stop ring E1.5 ②.
5) Remove the two screws (M 1.4×2.5) ③ and remove the LS Chassis Block Assy ④ from the Mechanical Chassis Block ⑤ in the direction of the arrow Ⓐ.

Note: The Tension Regulator Plate (2) can easily fall into the Mechanical Chassis Block Assy. Take care not to drop it.

### 2. Precautions During Re-Assembly

1) Before attaching the LS Chassis Block Assy, confirm that the respective phase-determining holes have been adjusted for correct phase. Also confirm that the specified locations of the Mechanical Chassis Block Assy and the LS Chassis Block Assy are coated with grease SG-055G (Ref. No. J-13). (Refer to Fig. a)
2) When attaching the LS Chassis Block Assy, insert the LS Cam Plate (on the LS chassis side) into the dowel (on the mechanical chassis side). Also insert the TG1 Cam Axis (on the LS chassis side) into the Tension Regulator Plate (2) (on the mechanical chassis side).
3) When attaching these block assemblies, attach them while pressing the TG-1 Arm Assy in the direction toward the TG-2 Guide. (Refer to Fig. b)
4) Pay attention that the TG-1 Arm is not floated.

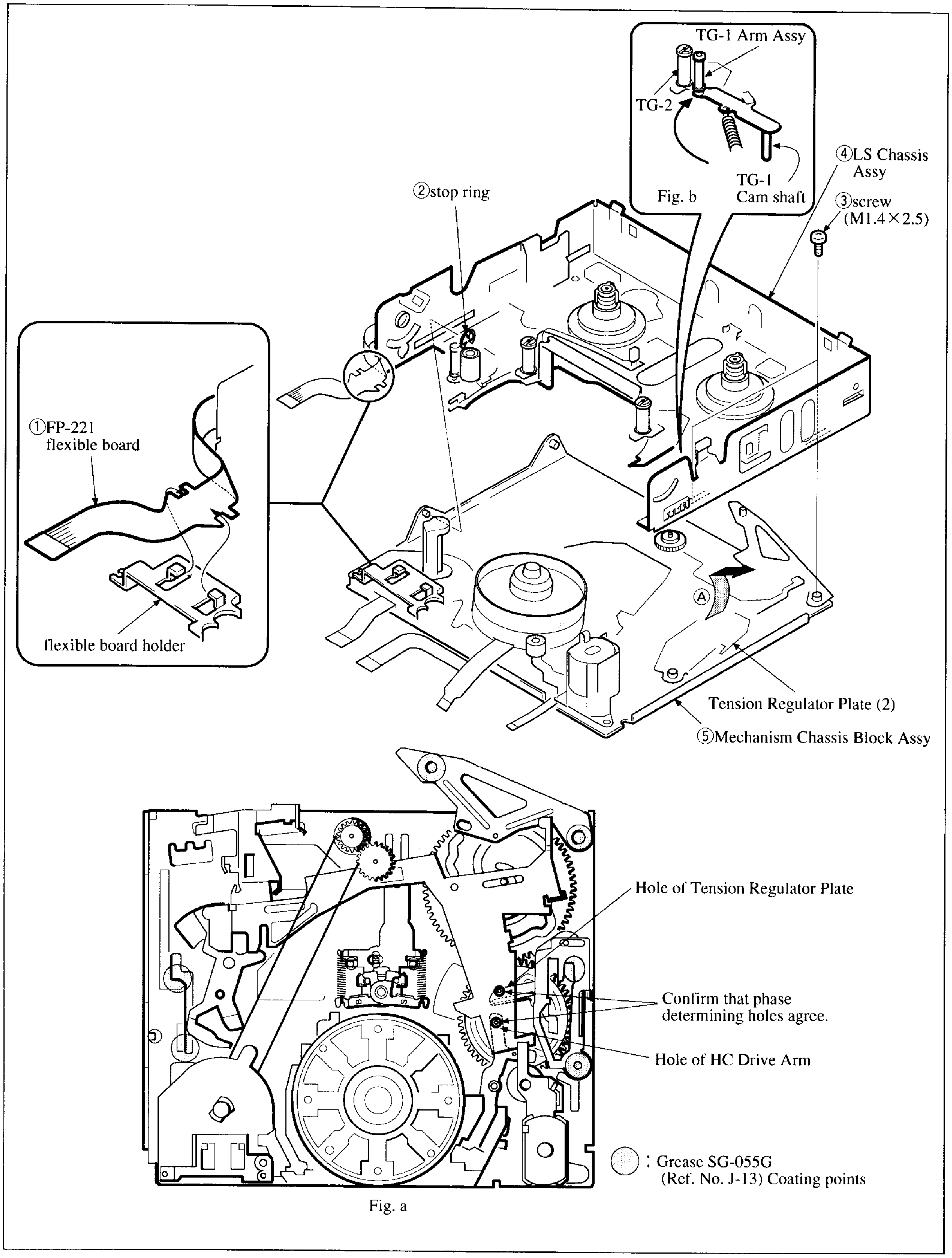

TG-1 Arm Assy
TG-2
TG-1
Cam shaft
Fig. b
④LS Chassis Assy
③screw (M1.4×2.5)
②stop ring
①FP-221 flexible board
flexible board holder
Ⓐ
Tension Regulator Plate (2)
⑤Mechanism Chassis Block Assy
Hole of Tension Regulator Plate
Confirm that phase determining holes agree.
Hole of HC Drive Arm
: Grease SG-055G (Ref. No. J-13) Coating points
Fig. a

Fig. 9

- **PARTS CONSTITUTING THE LS CHASSIS.**

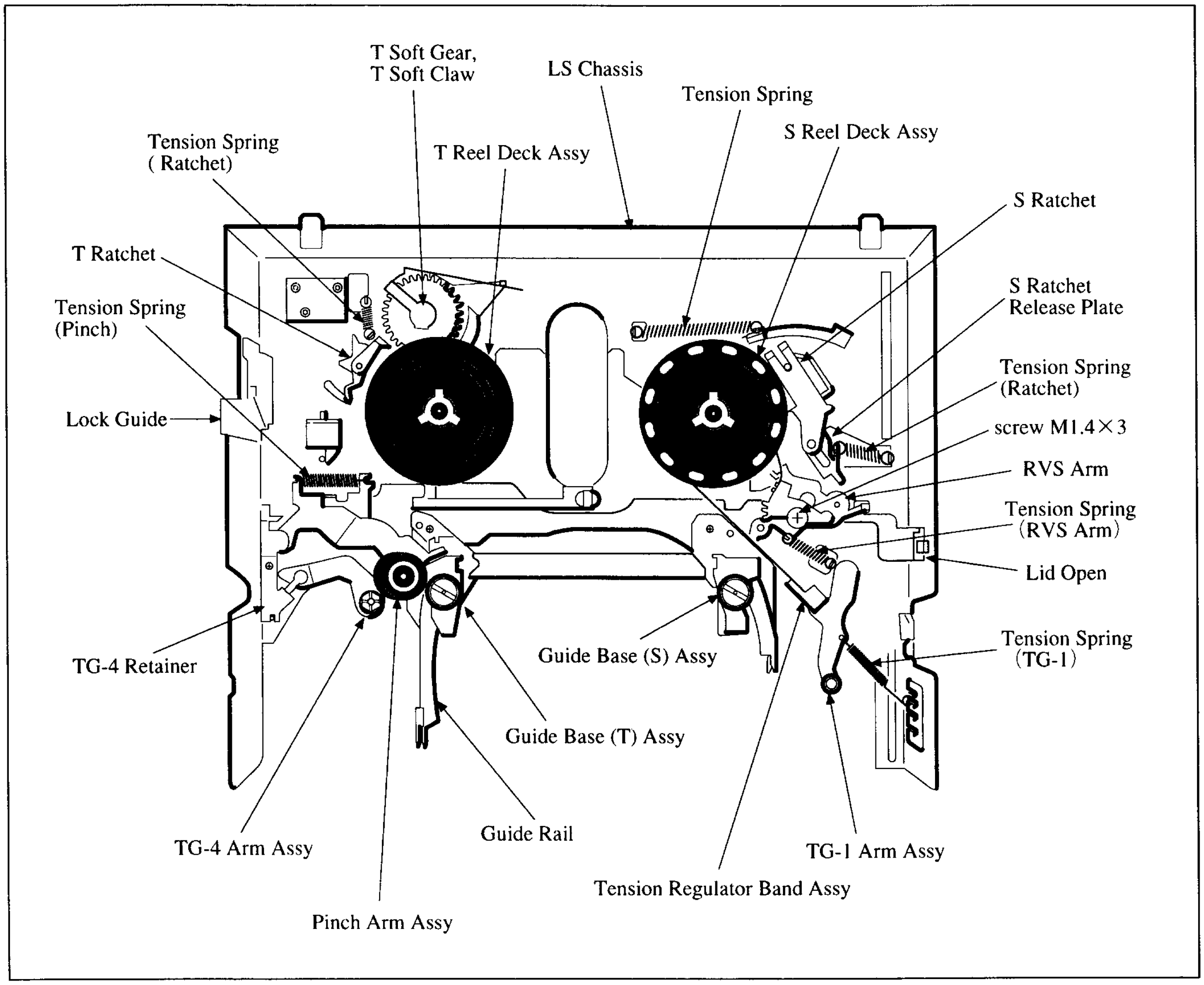

T Soft Gear,
T Soft Claw
LS Chassis
Tension Spring
S Reel Deck Assy
Tension Spring
( Ratchet)
T Reel Deck Assy
S Ratchet
T Ratchet
S Ratchet
Release Plate
Tension Spring
(Pinch)
Tension Spring
(Ratchet)
Lock Guide
screw M1.4×3
RVS Arm
Tension Spring
(RVS Arm)
Lid Open
Tension Spring
(TG-1)
TG-4 Retainer
Guide Base (S) Assy
Guide Base (T) Assy
Guide Rail
TG-4 Arm Assy
TG-1 Arm Assy
Tension Regulator Band Assy
Pinch Arm Assy

Fig. 10

## 3-6. T Reel Table Assy, T Ratchet, T Soft Gear Block Assy (Refer to Fig. 11)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the claw of the T Reel Deck Assy ① from the chassis and remove the T Reel Deck Assy from its shaft.
4) Remove the Tension Spring (Ratchet) ② from the LS Chassis and turn the T Ratchet ③ in the direction of the arrow Ⓐ and remove it .
5) Turn the T Soft Gear Block Assy ④ in the direction of the arrow Ⓑ and remove it .

### 2. Precautions During Re-Assembly

1) Confirm that the protrusions of both the T Soft Gear Block Assy and T Ratchet are securely locked to the LS Chassis.
2) Be careful not to deform the claw.

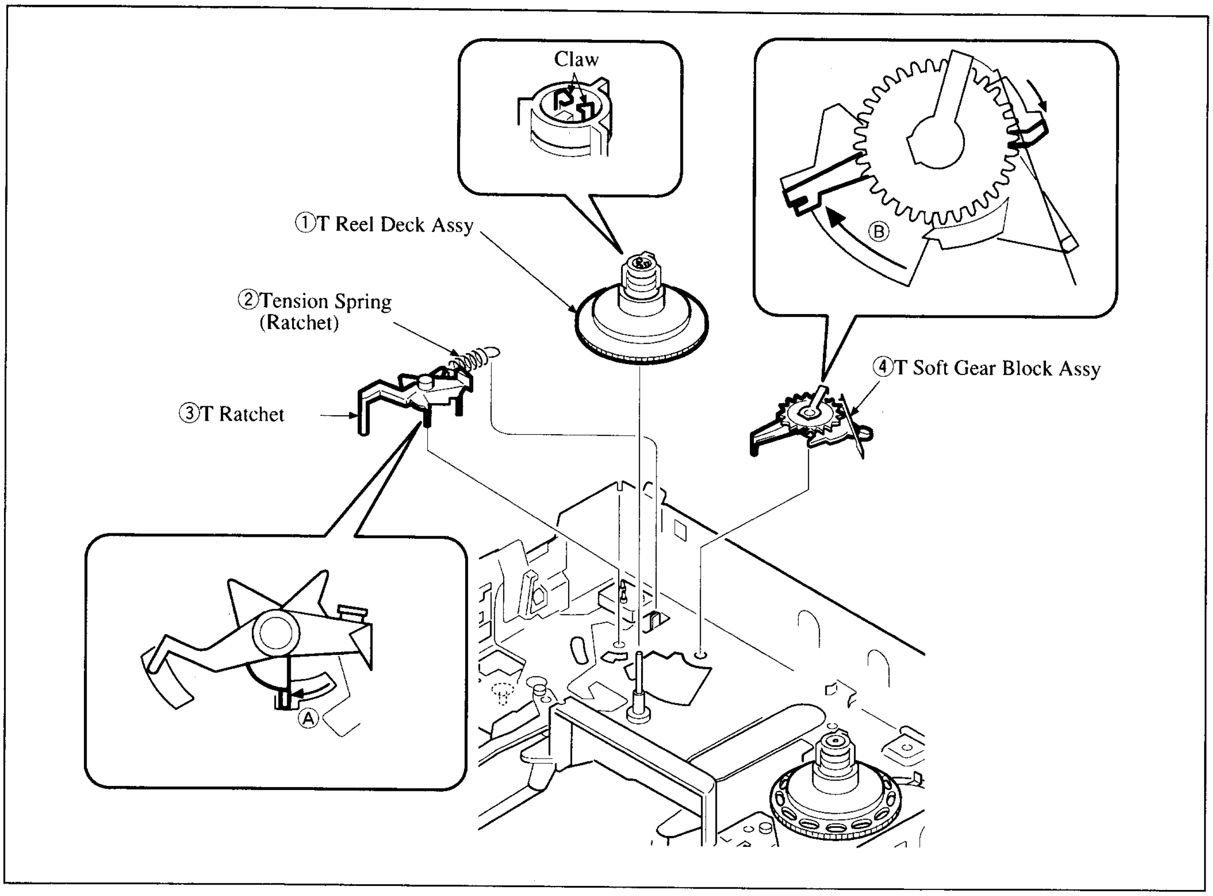


Fig. 11

## 3-7. Tension Regulator Band Assy, TG1 Arm Assy, S Reel Table Assy, S Ratchet, S Ratchet Release Plate, RVS Arm (Refer to Fig. 12)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the Tension Spring (TG1) ① from the LS Chassis.
4) Remove the screw (M 1.4×3) ② and remove the Tension Adjustment Block of the Tension Regulator Band Assy ④ form RVS Arm.
5) Release the S Ratchet ⑥ in the direction of the arrow Ⓐ and remove the Tension Regulator Band (while taking care not to bend the band) from the S Reel.
6) Remove the TG1 Arm Assy ③ from the LS Chassis, then remove the claw of the Tension Regulator Band Assy ④. (Refer to Fig. a)
7) Remove the claw of the S Reel Deck Assy ⑤ from the chassis and remove the S Reel Deck Assy from its shaft.
8) Remove the S Ratchet ⑥. (Because it is press-fitted, insert tip of screwdriver into the center of rotation and remove it.
9) Remove the Tension Spring (ratchet) ⑦ from the LS Chassis and remove the S Ratchet Release Plate ⑧.
10) Remove the Tension Spring ⑨ from the LS Chassis and remove the RVS Arm ⑩ by turning it..

### 2. Precautions During Re-Assembly

1) Confirm that the dowel of the S Ratchet Release Plate is inserted into the groove of the S ratchet and confirm that the center of the ratchet is press-fitted into bottom of the shaft. (It can be used again.)
2) When attaching the Tension Regulator Band Assy, take care not to bend it.
3) Pay attention that oil or grease is not spit on the surface of the Tension Regulated Band. (Pay attention also not to touch it with hand directly.)
4) Confirm that the tension regulator band is correctly inserted into the groove of the S Reel Deck Assy ⑤. (Refer to Fig. b)
5) When securing the Tension Adjustment Block using the screw, press it toward the position which gives the least tension, then tighten the fixing screw.
6) Before attaching the TG1 Arm Assy, coat the LS Chassis TG1 boss with oil (1/2 drop).
7) Do not touch the tape guide of the TG1 Arm Assy with bare hands.
8) Confirm that the claw of the S Reel Deck Assy is not deformed.

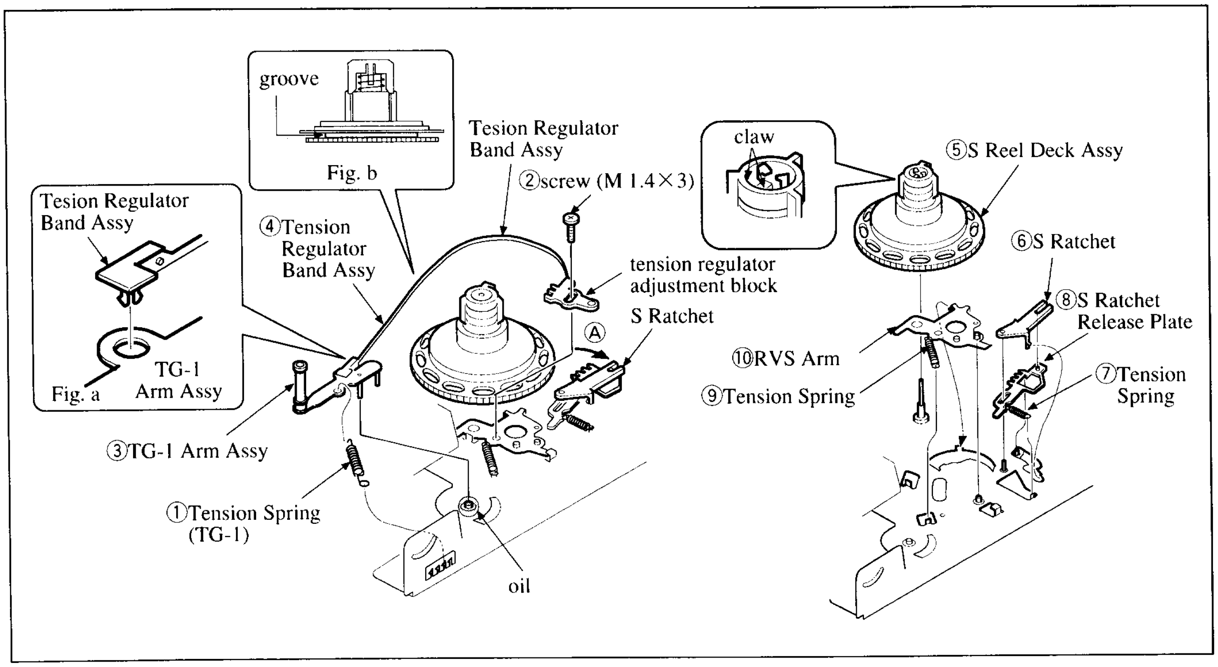

groove
Fig. b
Tesion Regulator Band Assy
②screw (M 1.4×3)
claw
⑤S Reel Deck Assy
⑥S Ratchet
⑧S Ratchet Release Plate
⑦Tension Spring
Tesion Regulator Band Assy
④Tension Regulator Band Assy
tension regulator adjustment block
S Ratchet
Ⓐ
⑩RVS Arm
⑨Tension Spring
TG-1 Arm Assy
Fig. a
③TG-1 Arm Assy
①Tension Spring (TG-1)
oil

Fig. 12

## 3-8. Pinch Arm Assy, TG4 Arm Block Assy (Refer to Fig. 13)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) Remove the Torsion Spring (pinch) ① from an end of Pinch Arm and hook it on the cut-out Ⓐ of the LS Chassis.
5) Remove the screw (M 1.4×2.5) ② and remove the TG4 Retainer ③.
6) Remove the TG4 Arm Block Assy ④ and remove the Torsion Spring ⑤ while paying attention to the Torsion Spring ⑤.
7) Remove the Pinch Arm Assy ⑥. (Caution: The Pinch Press Roller is easy to drop. Pay attention not to drop it.)
8) Remove the Torsion Spring (pinch) ① from the cut-out of the LS Chassis in the order of Ⓐ then Ⓑ.

### 2. Precautions During Re-Assembly

1) Before attaching these parts, coat the LS chassis pinch arm boss and TG4 arm boss with grease SG-055G (Ref. No. J-13).
2) Do not touch the tape guide of the TG4 Arm Block Assy and roller of the Pinch Arm Assy with bare hand.
3) After coating the Pinch Press Shaft of the Pinch Arm Assy ③ with grease SG-055G (Ref. No. J-13), attach the Pinch Press Roller.

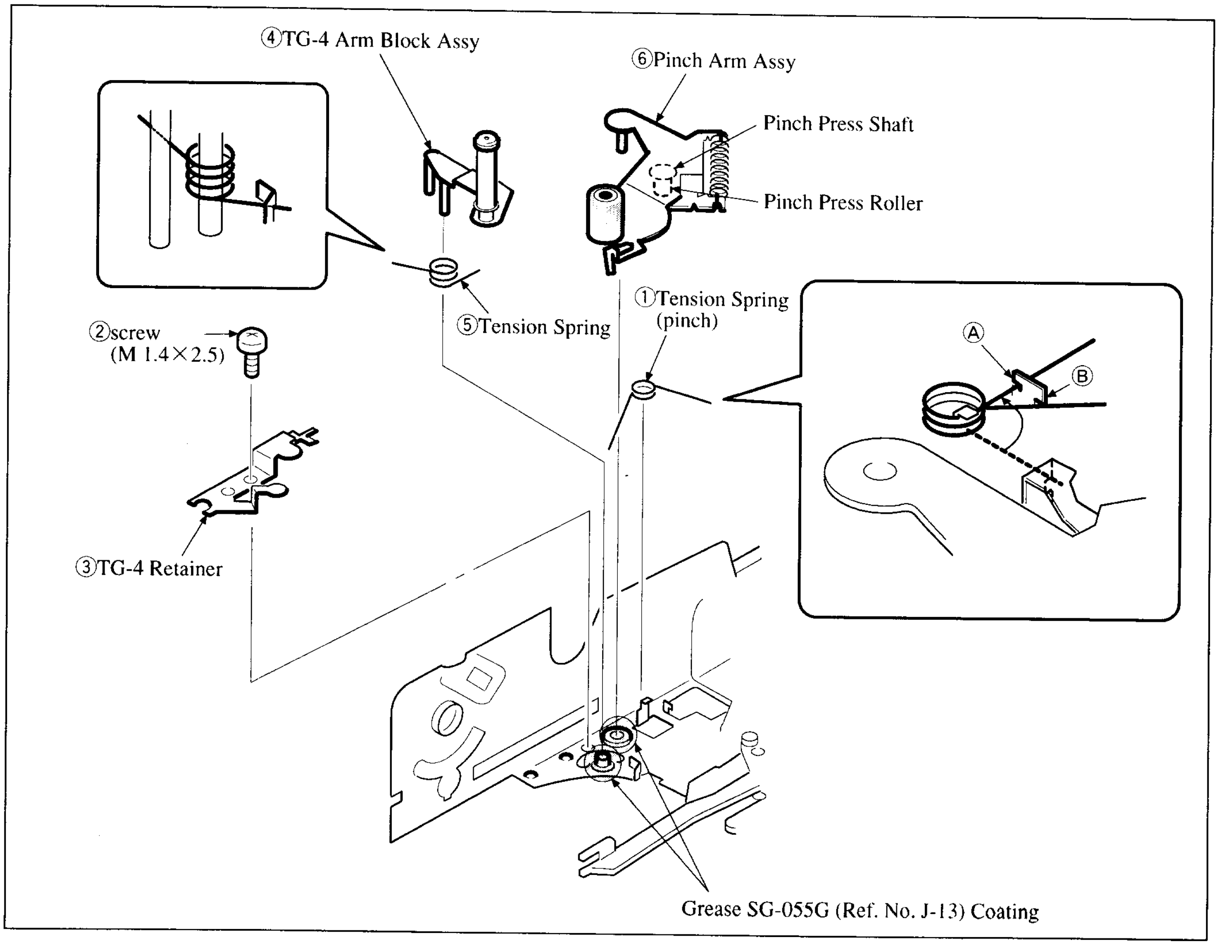

④TG-4 Arm Block Assy
⑥Pinch Arm Assy
Pinch Press Shaft
Pinch Press Roller
⑤Tension Spring
①Tension Spring (pinch)
②screw (M 1.4×2.5)
③TG-4 Retainer
Ⓐ
Ⓑ
Grease SG-055G (Ref. No. J-13) Coating

Fig. 13

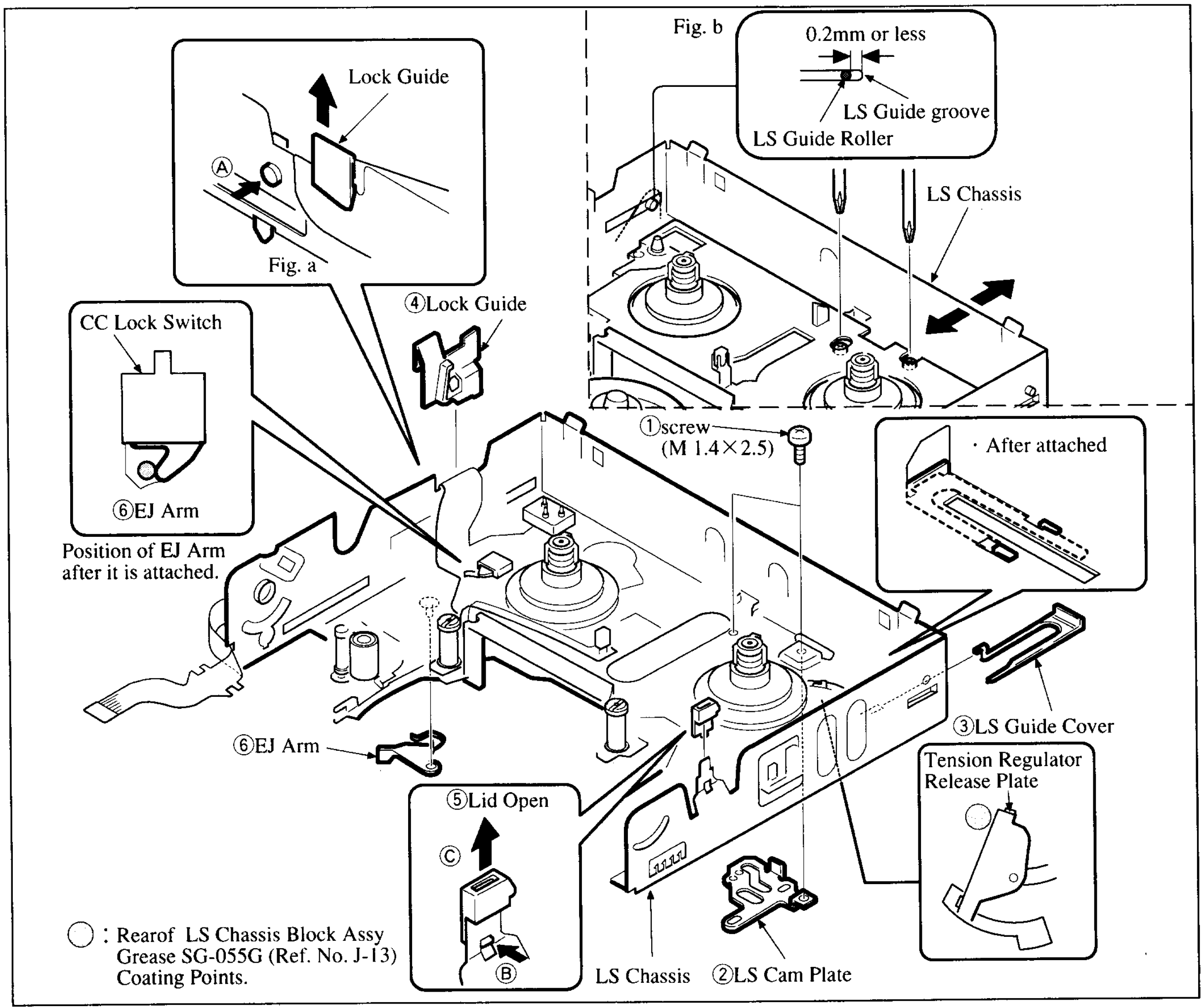
## 3-9. LS Cam Plate, LS Guide Cover, Lid Opener, EJ Arm, Lock Guide (Refer to Fig. 14)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) Remove the two screws (M 1.4×2.5) ① and remove the the LS Cam Plate ②.
   In this state, write a mark on the screw ① and on the LS Chassis indicating the position of the LS Cam Plate which helps during re-assembly.
5) Remove the LS Guide Cover ③.
6) Remove the Lock Guide ④ in the upward direction. (Refer to Fig. a)
7) Remove the Lid Open ⑤ in the direction of the arrow Ⓒ while pushing Ⓑ portion .
8) Remove the EJ Arm ⑥ . (The EJ Arm ⑥ is press-fitted. If the EJ Arm ⑥ is not damaged, it is not necessary to replace.)

### 2. Precautions During Re-Assembly

1) After the captioned parts are attached, confirm that the respective claws and dowels are engaged completely.
2) If the EJ Arm ⑥ is removed, be sure to replace it with the new replacement EJ Arm.
3) If any mark is not written when removing the LS Cam Plate ②, adjust and attack it as shown in Fig. b.


Lock Guide
Ⓐ
Fig. a
Fig. b
0.2mm or less
LS Guide groove
LS Guide Roller
LS Chassis
④Lock Guide
CC Lock Switch
⑥EJ Arm
Position of EJ Arm after it is attached.
①screw (M 1.4×2.5)
· After attached
③LS Guide Cover
Tension Regulator Release Plate
⑥EJ Arm
⑤Lid Open
Ⓒ
Ⓑ
LS Chassis
②LS Cam Plate

○ : Rearof LS Chassis Block Assy Grease SG-055G (Ref. No. J-13) Coating Points.

Fig. 14

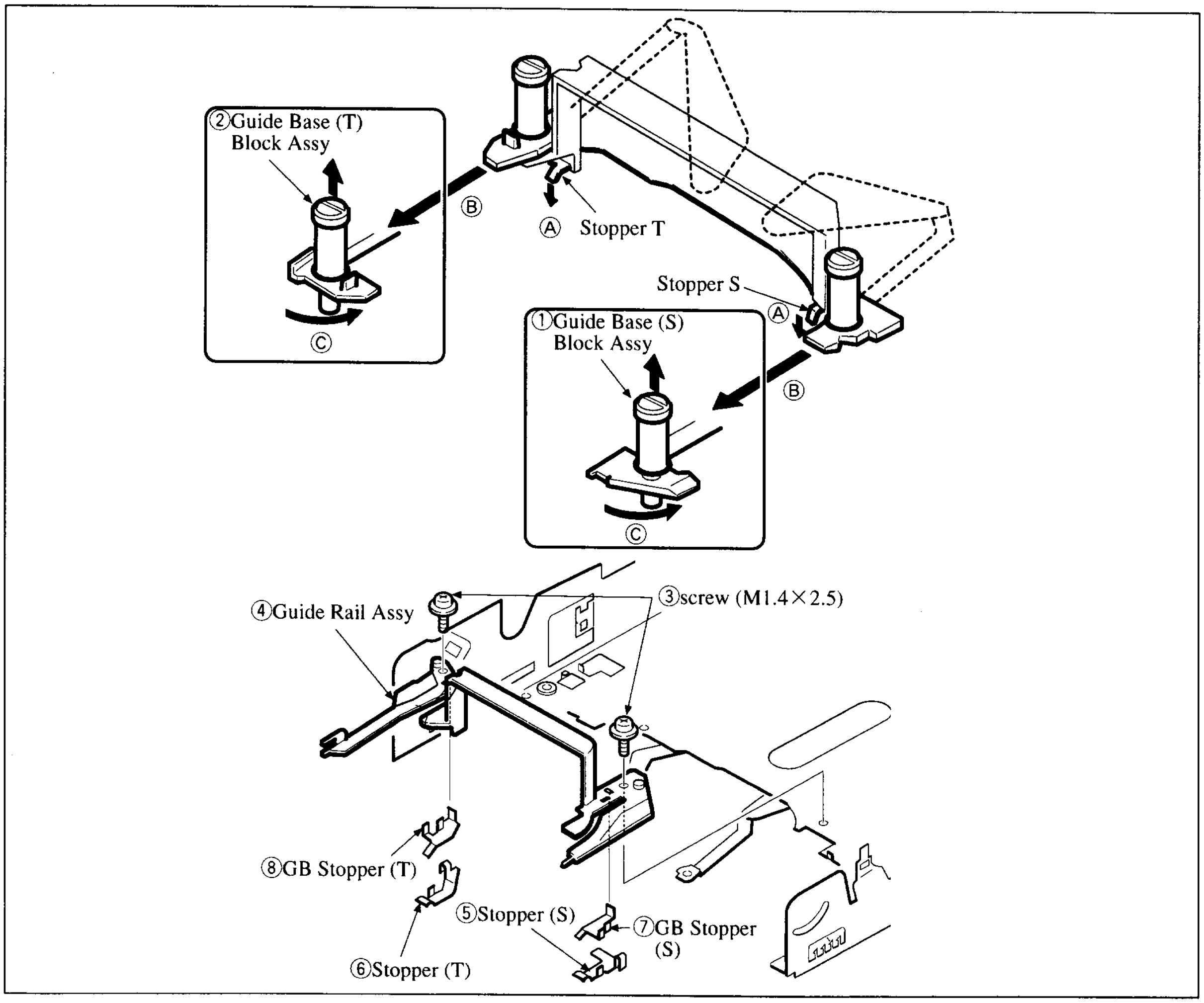
## 3-10. Guide Base (S) and (T) Block Assemblies, Guide Rail (Refer to Fig. 15)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
3) Remove the LS Chassis Block Assy referring to section 3-5.
4) While pushing the GB Stoppers (S) and (T) in the direction of arrow Ⓐ, press the guide arm in the direction of the arrow Ⓑ, and turn the Guide Base (S) and (T) Block Assemblies : ① and ② in the direction of the arrow Ⓒ respectively, and remove them.
5) Remove the two screws (M 1.4×2.5) ③ and remove the the Guide Rail Assy ④.
6) Remove the Stopper (S) and (T) : ⑤ and ⑥, then remove the GB Stopper S and T: ⑦ and ⑧.

### 2. Precautions During Re-Assembly

1) Pay attention not to deform the Guide Rail.
2) Do not touch the tape guide of the Guide Base (S) and (T) Block Assemblies with bare hand.
3) Pay attention not to deform the Stoppers (S) and (T).
4) When attaching the Guide Base (S) and (T) Blocks to the Guide Rail, move back the Guide Bases until the GB Stoppers (S) and (T) are locked. ("Click" sounds.)
5) After the captioned parts are attached, perform section "4. TAPE PATH ADJUSTMENT".



②Guide Base (T)
Block Assy
Ⓑ
Ⓐ Stopper T
Ⓒ
Stopper S
Ⓐ
①Guide Base (S)
Block Assy
Ⓑ
Ⓒ
④Guide Rail Assy
③screw (M1.4×2.5)
⑧GB Stopper (T)
⑤Stopper (S)
⑦GB Stopper
(S)
⑥Stopper (T)

Fig. 15

- **PARTS CONSTITUTING THE MECHANISM CHASSIS**

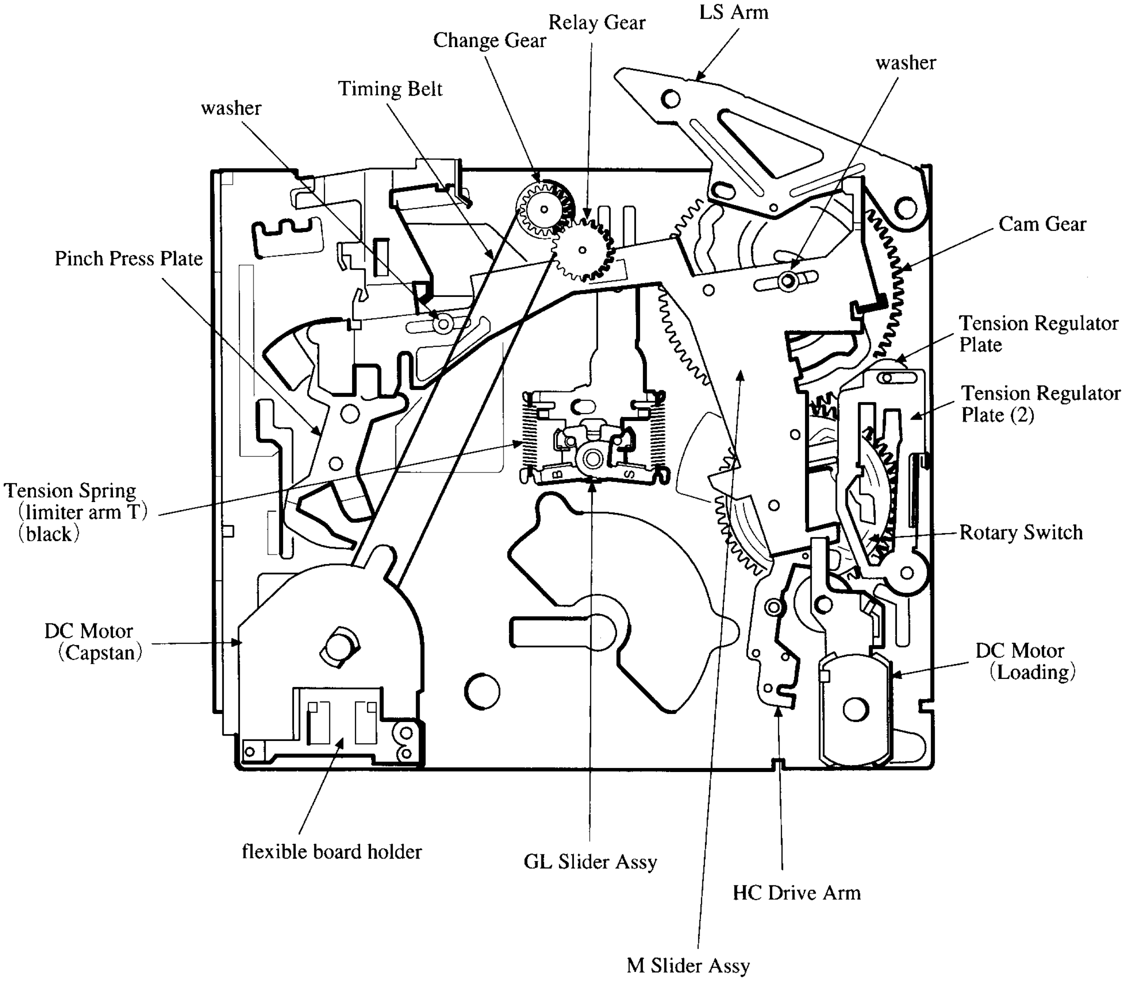

Relay Gear
LS Arm
Change Gear
washer
Timing Belt
washer
Cam Gear
Pinch Press Plate
Tension Regulator Plate
Tension Regulator Plate (2)
Tension Spring (limiter arm T) (black)
Rotary Switch
DC Motor (Capstan)
DC Motor (Loading)
flexible board holder
GL Slider Assy
HC Drive Arm
M Slider Assy

Fig.16

## 3-11. DC Motor Assy (Loading)
## (Refer to Fig. 17)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove soldering from the Ⓐ portion.
8) Remove the screw (M 1.4×2.5) ① and remove the Motor Holder Block Assy ② from the mechanism chassis along with the claw beneath the Motor Holder Block Assy as shown by the arrow Ⓑ.
9) Remove the Motor Shield ③ in the direction of the arrow Ⓒ (by opening the two ★ star marked points).
10) Release the claw on top of the Motor Holder ⑤ and remove the DC Motor Assy ④ in the direction of the arrow Ⓓ.
11) Remove the Motor Holder Sleeve ⑥, Gear A⑦ and Worm Shaft ⑧ in this order.

### 2. Precautions During Re-Assembly

1) Before attaching the Gear A ⑥, coat the Retainer Shaft Ⓔ with grease SG-055G (Ref. No. J-13).
2) After assembling the Motor Holder Block Assy, coat the six locations shown by Fig. a with grease SG-055G (Ref. No. J-13).
3) The HC Drive Arm is easy to drop. Confirm that it is attacked referring to Fig. 19.

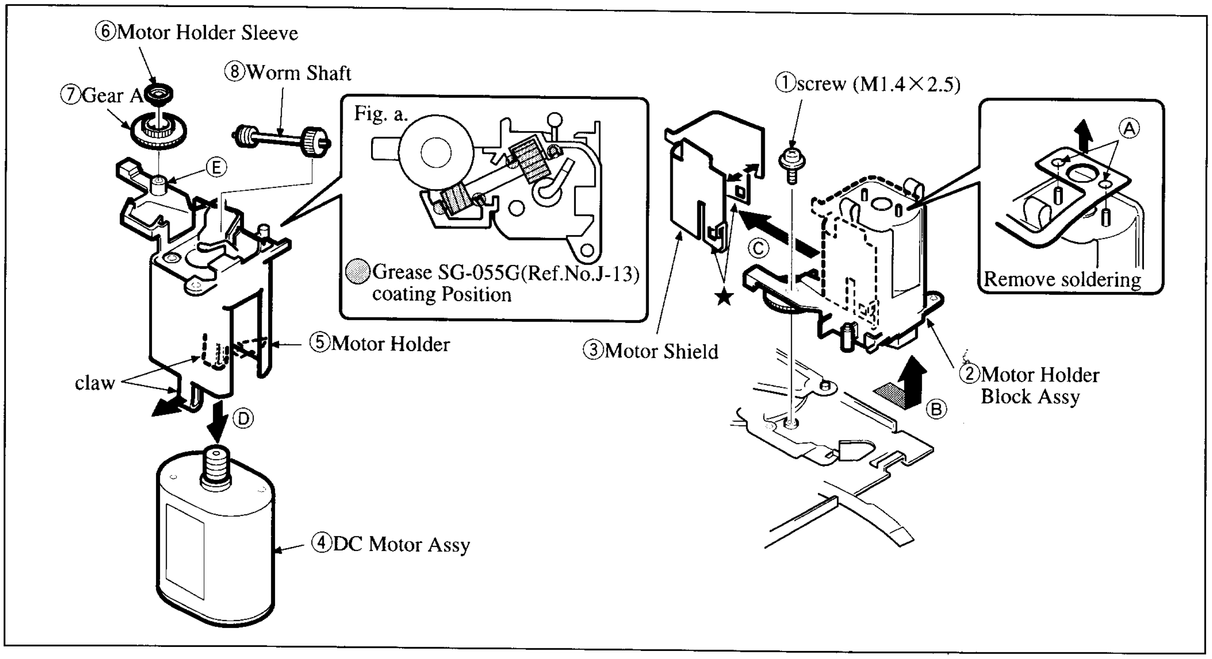

⑥Motor Holder Sleeve
⑦Gear A
⑧Worm Shaft
Ⓔ
Fig. a.
●Grease SG-055G(Ref.No.J-13) coating Position
⑤Motor Holder
claw
Ⓓ
④DC Motor Assy
③Motor Shield
Ⓒ
★
①screw (M1.4×2.5)
Ⓐ
Remove soldering
②Motor Holder Block Assy
Ⓑ

Fig. 17

## 3-12. Tension Regulator Plate 2, Relay Gear, M Slider Assy (Refer to Fig. 18)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC motor referring to section 3-11.
8) Remove the Tension Regulator Plate 2 ①.
9) Remove the Relay Gear ②.
10) Remove the two washers ③. Remove the M Slider Assy ④. At the point, confirm that the LS Roller ⑤ is not dropped.

### 2. Precautions During Re-Assembly

1) Before attaching the M Slider Assy ④, coat the LS Roller Shaft Ⓐ on the back of the M Slider Assy, the Pinch Press Plate Shaft Ⓑ and the mechanism chassis M Slider Axis Ⓒ with grease SG-055G (Ref. No. J-13). (Refer to Fig. b)
2) While confirming the phase-determining holes, attach the M Slider Assy ④ while paying attention to the claw.
3) Attach the Tension Regulator Plate 2 ① inside the Tension Regulator Plate. (Refer to the asterisk * Marked portion of Fig. a)
4) Before attaching the Relay Gear ②, coat the mechanism chassis Relay Gear Axis Ⓓ with grease SG-055G (Ref. No. J-13).

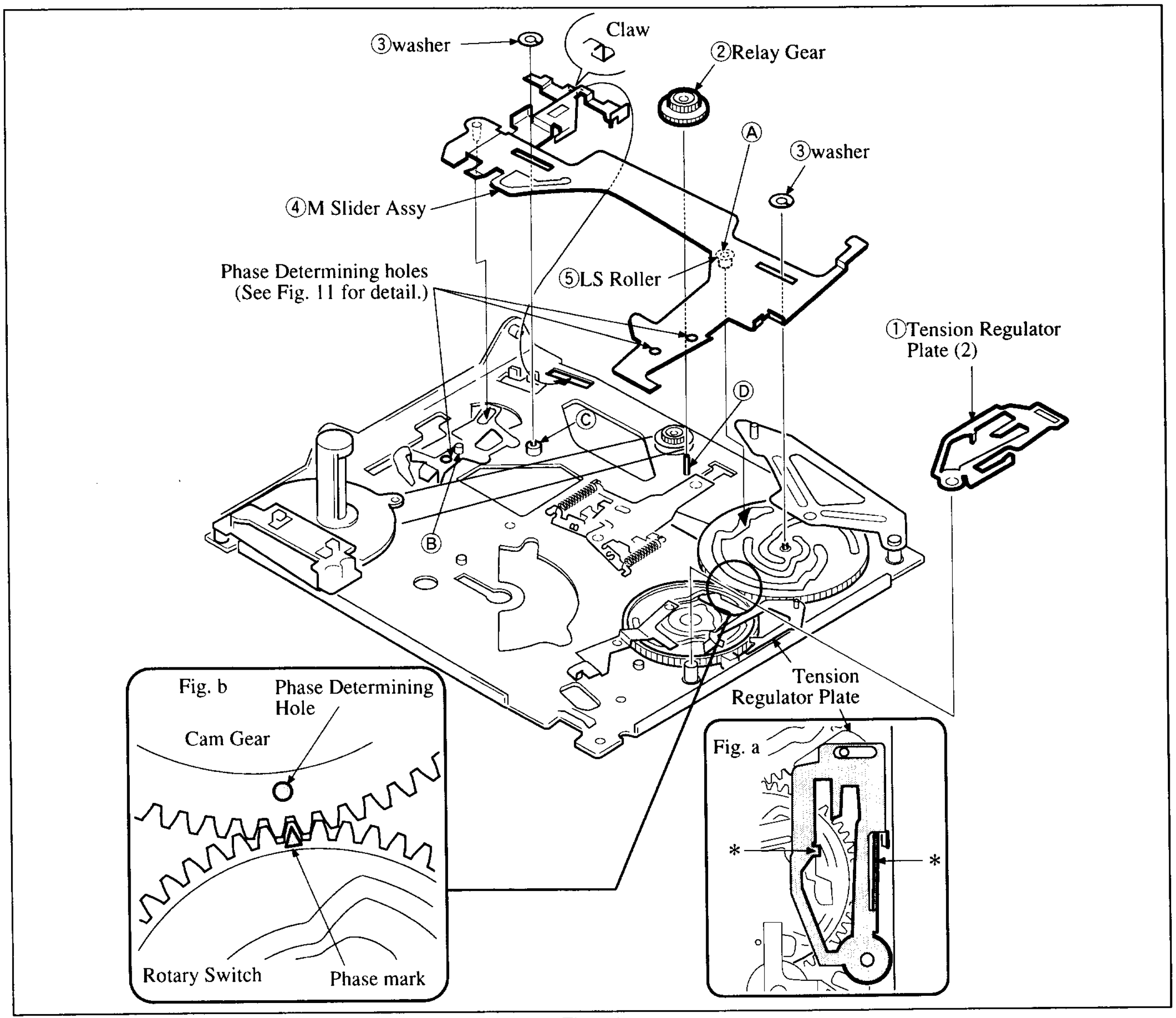

③washer
Claw
②Relay Gear
Ⓐ
③washer
④M Slider Assy
Phase Determining holes
(See Fig. 11 for detail.)
⑤LS Roller
①Tension Regulator
Plate (2)
Ⓓ
Ⓒ
Ⓑ
Tension
Regulator Plate
Fig. a
*
*
Fig. b
Phase Determining
Hole
Cam Gear
Rotary Switch
Phase mark

Fig. 18

## 3-13. LS Arm, HC Drive Arm, Pinch Press Plate, Tension Regulator Plate (Refer to Fig. 19)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm ①. At this point, confirm that the LS Roller ② is not dropped.
10) Remove the HC Drive Arm ③, Pinch Press Plate ④ and Tension Regulator Plate ⑤.

### 2. Precautions During Re-Assembly

1) Before attaching the captioned parts, confirm that phases of the Cam Gear and the Rotary Switch agree. (See Fig. a.)
2) Insert the dowel of the Tension Regulator Plate ⑤ into the groove outside the rotary switch.
3) Before attaching the Pinch Press Plate ④, check for grease on the mechanism chassis Pinch Press Plate Shaft Ⓐ. If grease cannot be found, coat it with grease SG-055G (Ref. No. J-13). After attaching the Pinch Press Plate ④, align its phase hole until it agrees with the phase-determining hole on the mechanism chassis.
4) Insert the dowel of the HC Drive Arm ③ into the groove inside the rotary switch.
5) Before attaching the LS Arm ①, coat the LS roller shaft of the LS Arm ① with grease SG-055G (Ref. No. J-13).

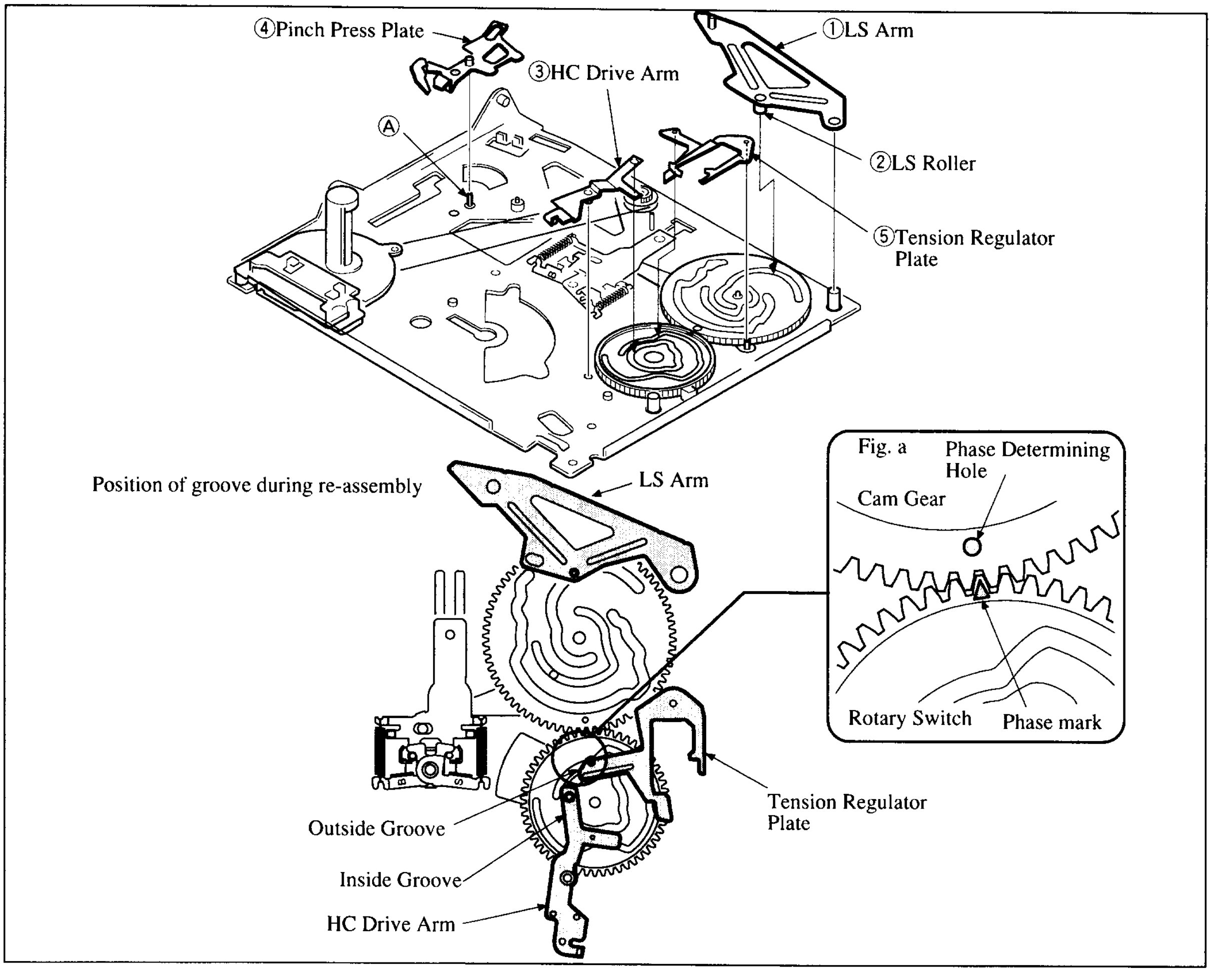

④Pinch Press Plate
③HC Drive Arm
①LS Arm
Ⓐ
②LS Roller
⑤Tension Regulator Plate
Position of groove during re-assembly
LS Arm
Fig. a
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
Tension Regulator Plate
Outside Groove
Inside Groove
HC Drive Arm

Fig. 19

## 3-14. Cam Gear (Refer to Fig. 20)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm and Tension Regulator Plate referring to section 3-13.
10) Remove the Cam Gear ①.

### 2. Precautions During Re-Assembly

1) Before attaching the Cam Gear ①, align the phase mark on the rotary switch until it agrees with the phase-determining hole Ⓐ on the mechanism chassis, and align the GL Arm's phase mark Ⓑ until it agrees with the phase-determining hole Ⓐ on the mechanism chassis. Coat the mechanism's chassis Gear Axis Ⓐ with grease SG-055G (Ref. No. J-13).
2) Attach the Cam Gear ① so that its phase hole agrees with the phase mark on the rotary switch. (Refer to Fig. a)
3) After the Cam Gear ① is attached, coat the GL Arm Axis Block of the cam gear with grease SG-055G (Ref. No. J-13).

Reference : The phase marks of the Cam Gear and Rotary Switch can also be checked from the rear side of mechanism chassis. It means that the phase can be confirmed after mechanism deck is fully re-assembled.

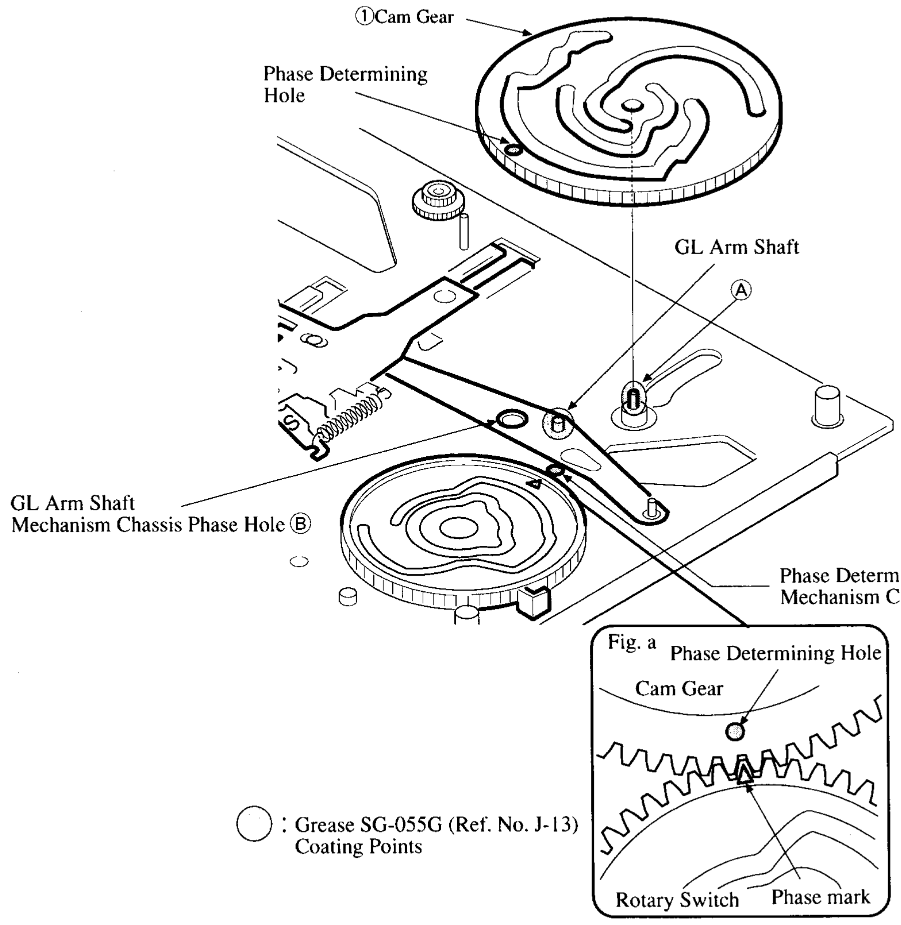

①Cam Gear
Phase Determining Hole
GL Arm Shaft
Ⓐ
GL Arm Shaft
Mechanism Chassis Phase Hole Ⓑ
Phase Determining Hole Ⓐ of Mechanism Chassis
Fig. a
Phase Determining Hole
Cam Gear
Rotary Switch
Phase mark
○ : Grease SG-055G (Ref. No. J-13) Coating Points

Fig. 20

## 3-15. GL Slider Assy, GL Arm (Refer to Fig. 21)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm and Tension Regulator Plate referring to section 3-13.
10) Remove the Cam Gear referring to section 3-14.
11) Remove the GL Slider Assy ① by sliding it in the direction of the arrow Ⓐ.
12) Remove the GL Arm ②.

### 2. Precautions During Re-Assembly

1) The Tension Spring T③ is colored black and the Tension Spring S④ is colored silver.
2) Coat the position shown in Fig. a of the GL Slider Assy ① with grease SG-055G (Ref. No. J-13).
3) Coat the four points Ⓑ where GL slider is attached on the mechanism chassis with grease SG-055G (Ref. No. J-13).
4) After attaching the GL Arm ② and the GL Slider Assy, align the GL arm phase hole until it agrees with the phase-determining hole on the mechanism chassis.

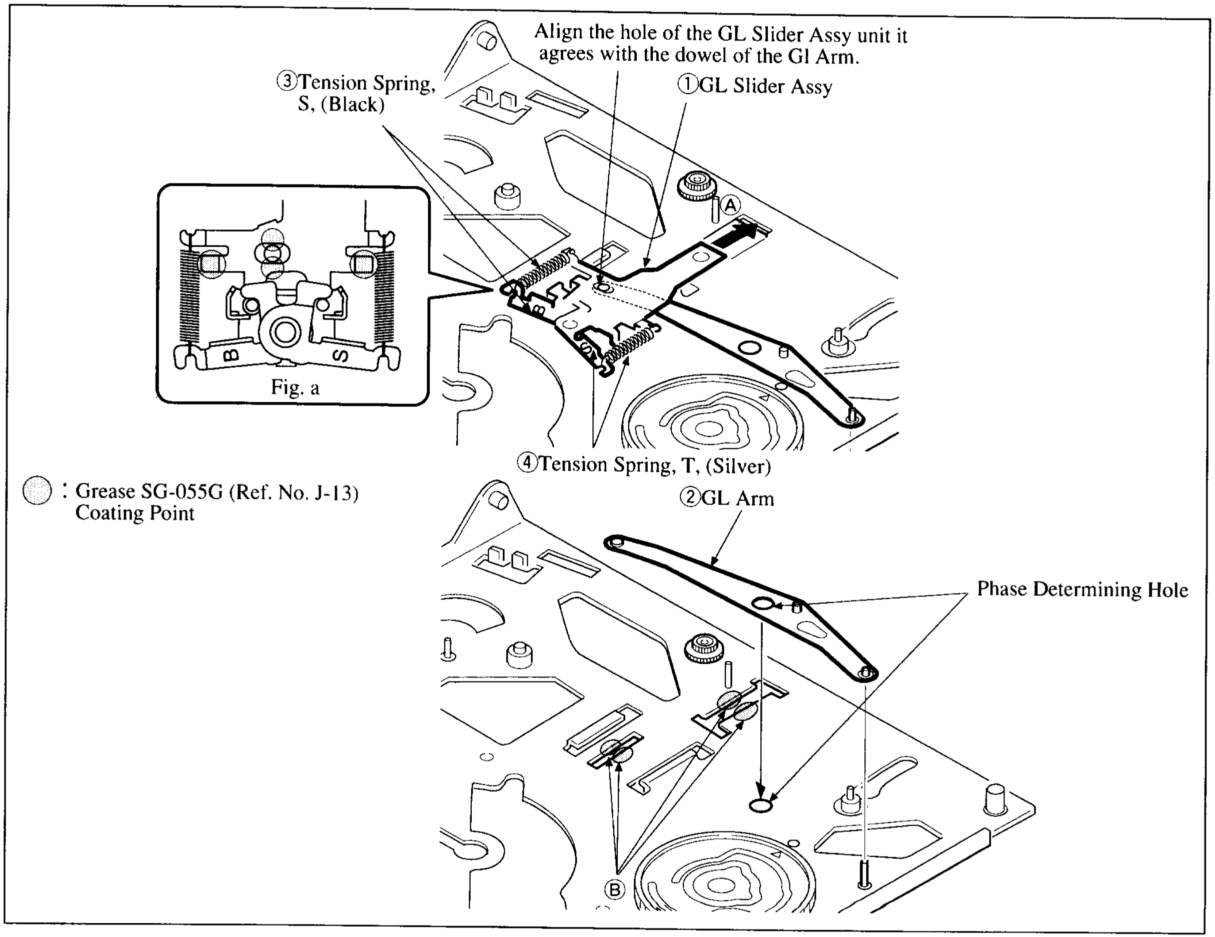

Align the hole of the GL Slider Assy unit it agrees with the dowel of the Gl Arm.
③Tension Spring, S, (Black)
①GL Slider Assy
Ⓐ
B
S
Fig. a
④Tension Spring, T, (Silver)
②GL Arm
Phase Determining Hole
Ⓑ
● : Grease SG-055G (Ref. No. J-13) Coating Point

Fig. 21

## 3-16. Rotary Switch (Refer to Fig. 22)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the LS Arm, Tension Regulator Plate, HC Drive Arm and Pinch Press Plate referring to section 3-13.
10) Remove the Cam Gear referring to section 3-14.
11) Remove soldering the portion Ⓐ on the rear of the Rotary Switch. (Pay attention at this moment that the GL Slider and GL Arm do not drop.)
12) While lifting up the portion Ⓑ about 1 mm (pay attention not to break it), hold the portion Ⓒ and turn it in the direction of the arrow Ⓓ to remove the Rotary Switch.

### 2. Precautions During Re-Assembly

1) Before attaching the Rotary Switch by soldering on the FP-220 board, insert the portion Ⓑ dowel into the hole on the mechanism chassis. Confirm that the three claws are engaged with the mechanism chassis.

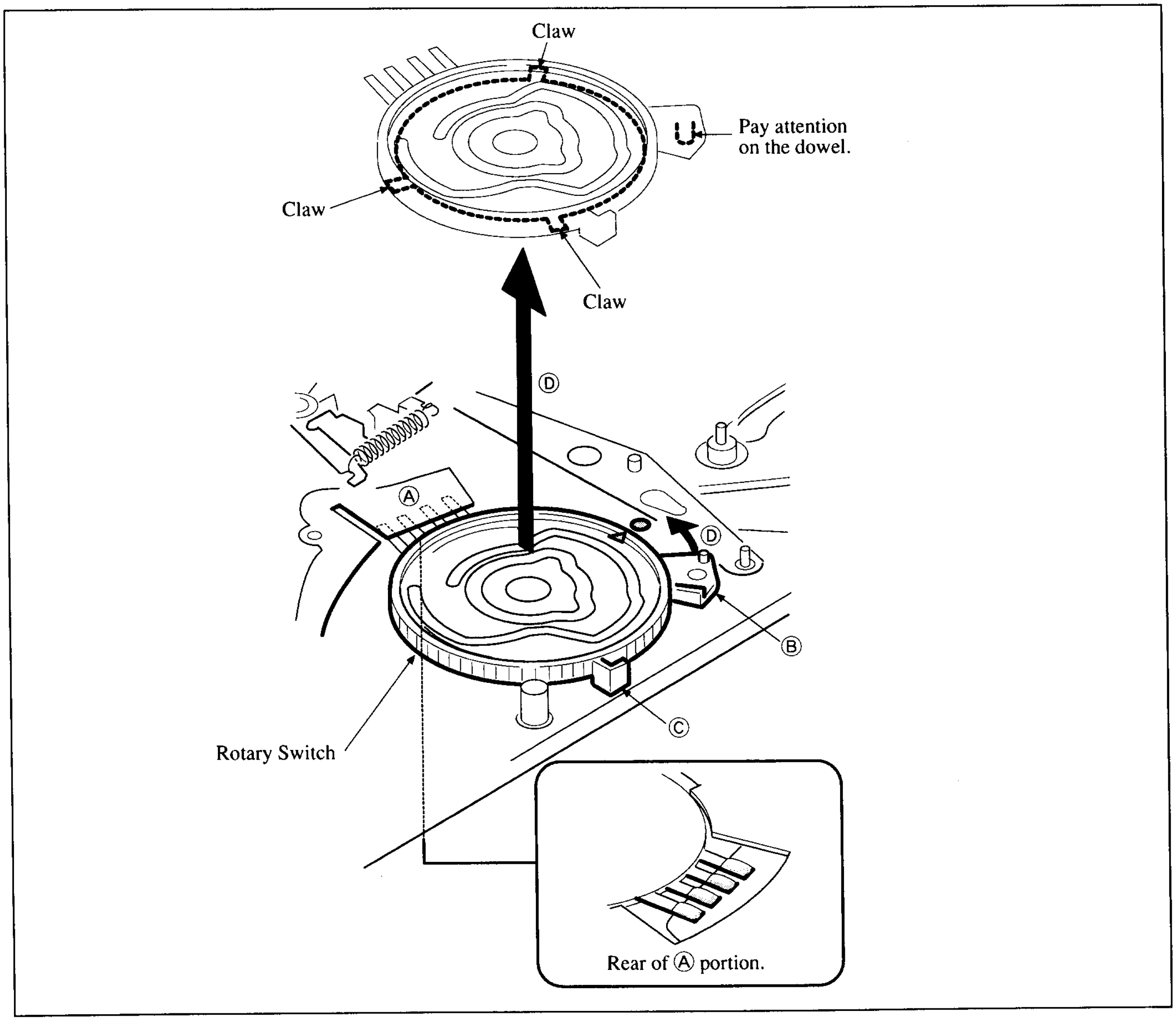


Fig. 22

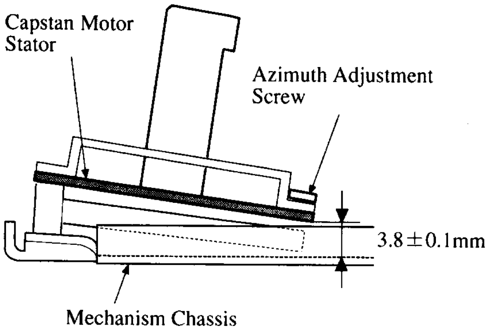
## 3-17. Capstan Motor (Refer to Fig. 23)

### 1. Disassembly Procedure

1) Remove the Cassette Compartment Block Assy referring to section 1-1.
2) Remove the HC Roller Block Assy referring to section 3-1.
3) Remove the Drum Assy referring to section 3-2.
4) Remove the Drum Base Block Assy referring to section 3-3.
5) Remove the Gooseneck Retainer and Gooseneck Gear Assy referring to section 3-4.
6) Remove the LS Chassis Block Assy referring to section 3-5.
7) Remove the DC Motor Assy referring to section 3-11.
8) Remove the Tension Regulator Plate 2, Relay Gear and M Slider Assy referring to section 3-12.
9) Remove the Pinch Press Plate referring to section 3-13.
10) Remove the screw (M 1.4×6.7) ① and remove the Flexible Board Holder ②.
11) Remove the two screws (M 1.4×6.7) ③ and remove the Capstan Motor ④, Timing Belt ⑤ and Capstan Spacer ⑥.
12) Remove the washer ⑦ and remove the Changer Gear ⑧.

### 2. Precautions During Re-Assembly

1) Confirm that the timing belt is not twisted.
2) Do not touch the capstan with bare hand.
3) Lubricate the mechanism chassis's Change Gear shaft Ⓐ.
4) After attaching the Capstan Motor, perform the capstan azimuth adjustment.


Capstan Motor Stator
Azimuth Adjustment Screw
3.8±0.1mm
Mechanism Chassis

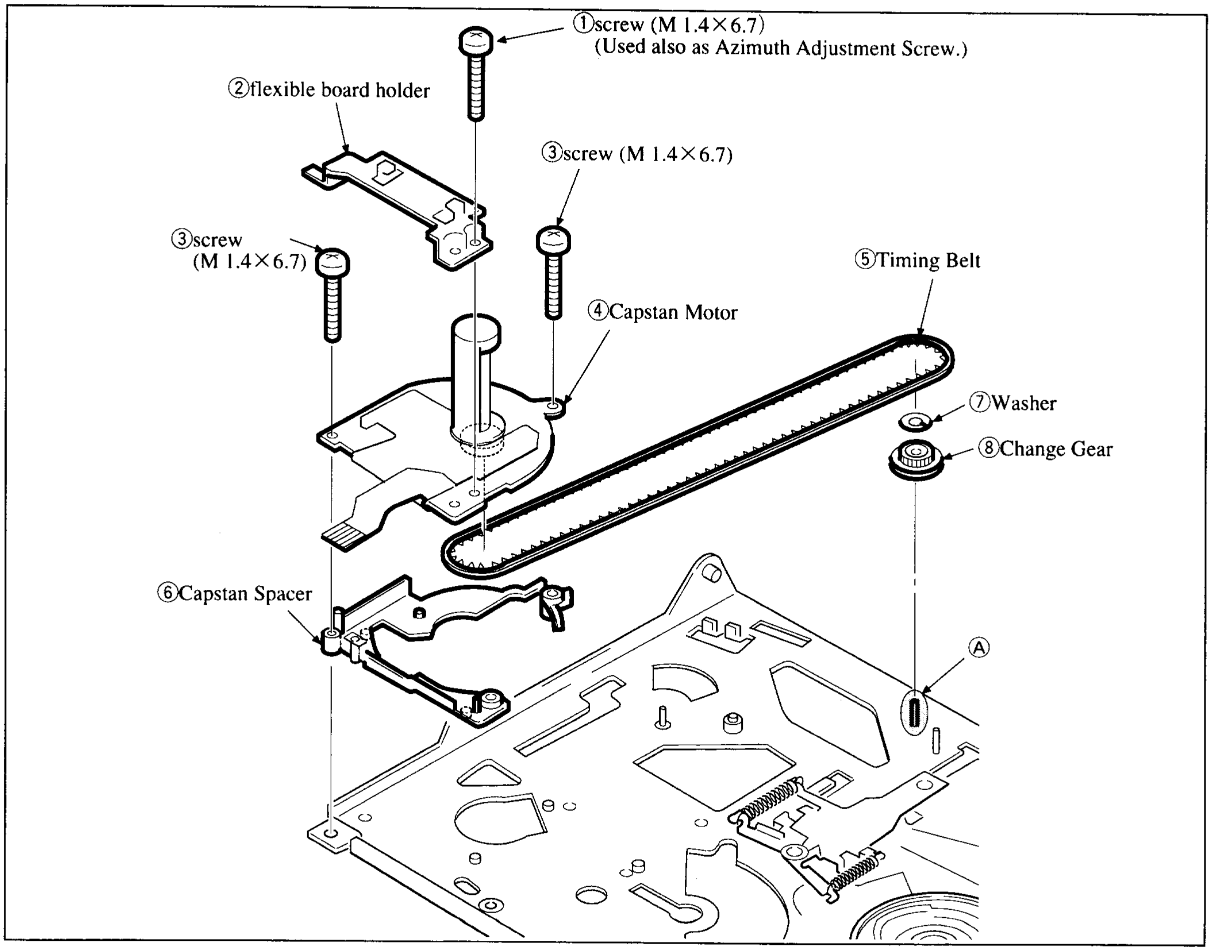

①screw (M 1.4×6.7)
(Used also as Azimuth Adjustment Screw.)
②flexible board holder
③screw (M 1.4×6.7)
③screw
(M 1.4×6.7)
⑤Timing Belt
④Capstan Motor
⑦Washer
⑧Change Gear
⑥Capstan Spacer
Ⓐ

Fig. 23

## 3-18. Tension Regulator Position Adjustment (Refer to Fig.24)

### 1. Adjustment Procedure

1) Insert a cassette Tape and run the Tape in PB mode.
2) While tape is running, confirm that the distance between the LS Chassis and TG-1 Guide's top flange is 8.3mm.
3) If not, proceed to step 4).
4) Loosen the screw ① (M 1.4×3).
5) If the TG-1 Guide is located inside the specified position, move position of the Tension Regulator Band Assy using the FWD B.T. Adjustment tool screwdriver (Ref. No. J-9) as shown in the direction of the arrow Ⓐ. If it is located outside, move it in the direction of the arrow Ⓑ.
6) Tighten the screw ① (M 1.4×3).

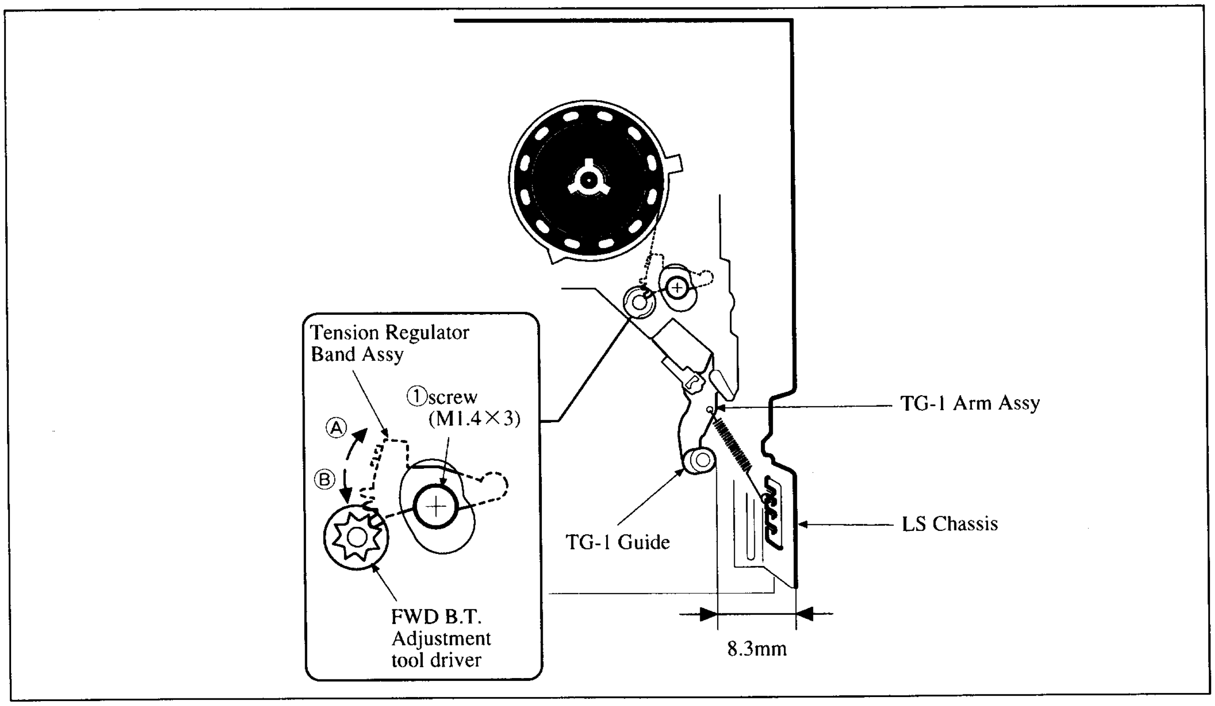

Tension Regulator Band Assy
①screw (M1.4×3)
Ⓐ
Ⓑ
FWD B.T. Adjustment tool driver
TG-1 Guide
TG-1 Arm Assy
LS Chassis
8.3mm

Fig.24

## 3-19. FWD Tape Hold-Back Tension Adjustment (Refer to Fig. 25)

### 1. Adjustment Procedure

1) Insert the torque measurement cassette to the machine.
2) Put the machine in the FWD mode. Confirm that the reading on the S side is in the range from 8.0 to 10.5 g•cm. If the reading is outside the specification range, make the following adjustments.
3) If the reading is higher than the specification, change the TG-1 Tension Spring to the side Ⓐ.
4) If the reading is lower than the specification, change the TG-1 Tension Spring to the side Ⓑ.

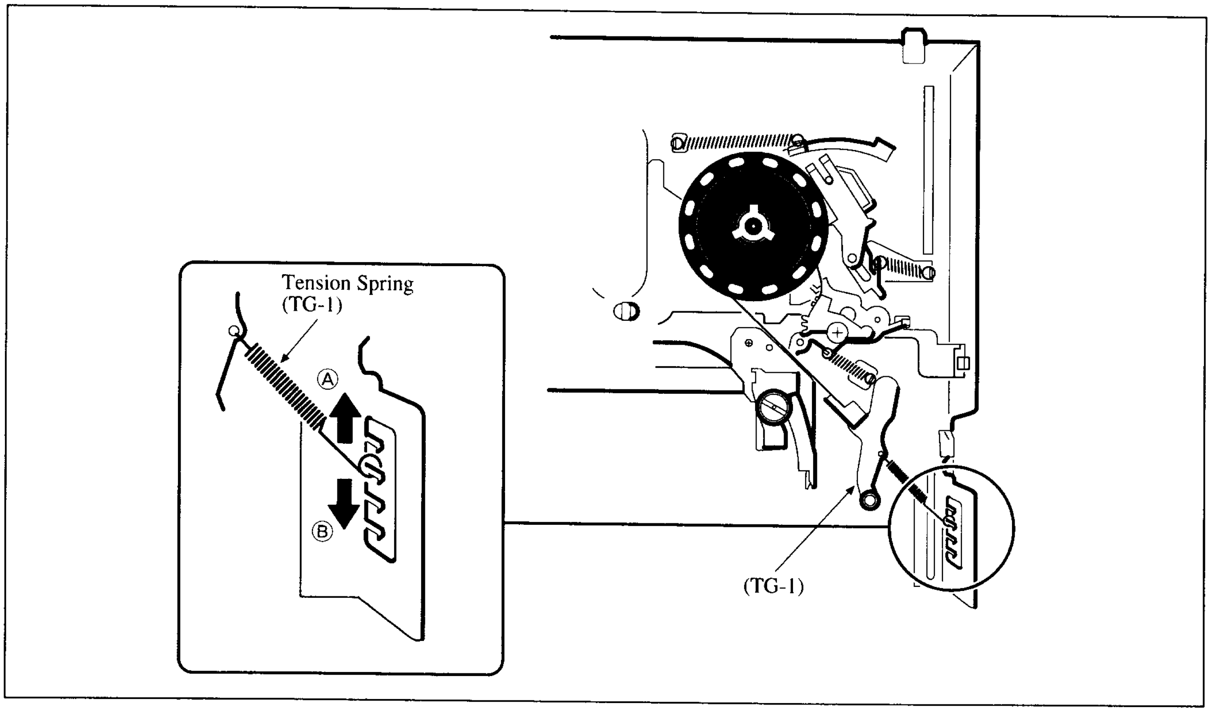


Fig. 25

## 4. TAPE PATH ADJUSTMENT

| | |
|---|---|
| Purpose: | Adjusts the head linearity. |
| Adjustment Error: | Noise appears on top and bottom of display when playing back the tape recorded by other machines. |

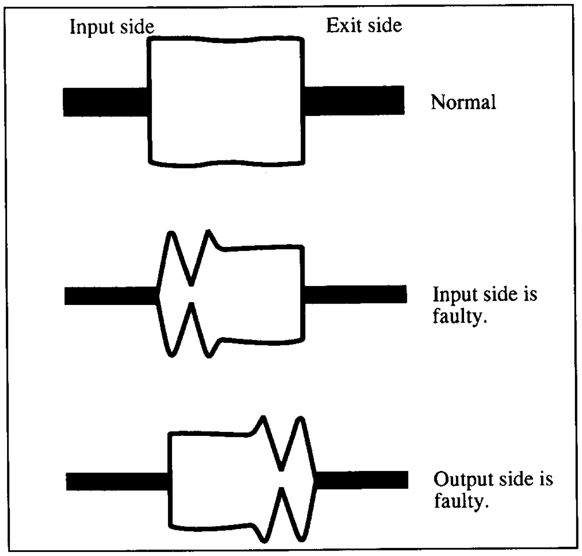


Fig. 26

### 4-1. Preparations for Adjustments

1) Clean the tape running surface (tape guide, drum, capstan, pinch roller).
2) Connect the adjustment remote commander to the REMOTE terminal (JACK block).
3) Establish the PATH mode using the adjustment remote commander (Track Shift mode)* to cancel auto tracking.
4) Connect an oscilloscope.
   CH1: Test connector PB RF terminal
   External trigger: Test connector PB SWP terminal
5) Playback the tracking alignment tape WR5-1NP (NTSC) or WR5-1CP (PAL) (Ref. No. J-6).
6) Check to see that RF waveform is flat at input and exit sides on oscilloscope.
   If it not flat, perform the following section 4-2 until it is flat.
7) After completing the adjustment, release the PATH mode (Track Shift mode).*.

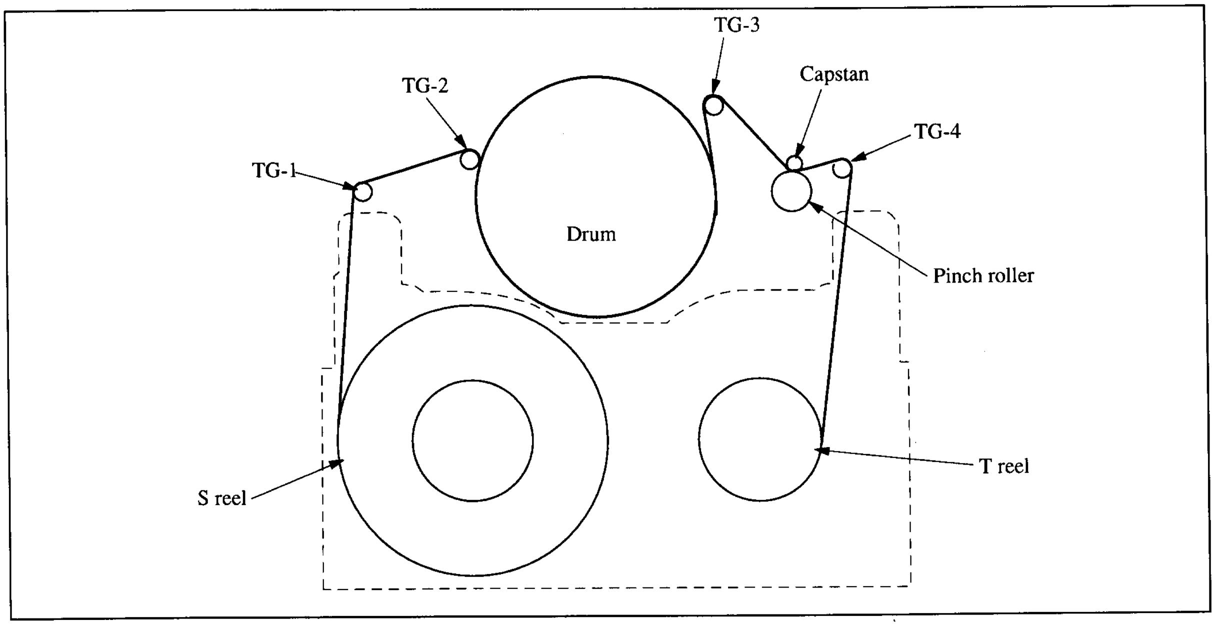


Fig. 27

* How to enter and exit the Track Shift mode. (In the case of CCD-TR420E/TR440E)

Entering the Track Shift mode

1. Select page : 6, address : 00 set data : 01 and press the PAUSE button.
2. Select page : 7, address : 01 set data : 03 and press the PAUSE button.

Exitting the Track Shift mode

1. Select page : 7, address : 01 set data : 00 and press the PAUSE button.
2. Select page : 6, address : 00 set data : 00 and press the PAUSE button.

### 4-2. Tracking Adjustment (Refer to Fig. 28.)

1) Playback the tracking alignment tape WR5-1NP (NTSC) or WR5-1CP (PAL) (Ref. No. J-6).
2) Adjust the tape guide No. 2 until the input side waveform becomes flat.
3) Adjust the tape guide No. 3 until the input side waveform becomes flat.

☆ Zenith adjustment screws for the TG-2 and TG-3 do not need to be adjusted.

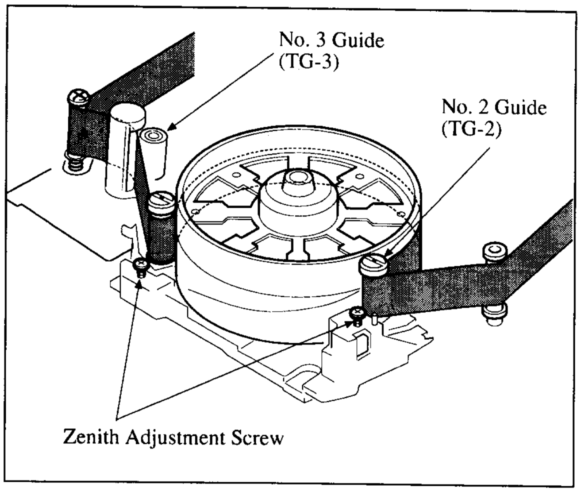


Fig. 28

### 4-3. No. 4 Guide (TG-4) Adjustment (Refer to Fig. 29.)

1) Playback a tape in REV mode.
2) Confirm that tape slack does not occur in between the guide No. 3 (TG-3) ① and Capstan ②. If tape slack is found, turn the height adjustment screw ④ of the Guide No. 4 (TG-4) ③ until tape slack is removed.
3) Playback a tape in FWD mode. Confirm that tape slack does not occur in between the guide No. 4 (TG-4) ③ and capstan ②. (Specification = 0.5 mm or less) If tape slack of more than 0.5 mm is found, turn the TG-4 nut ④ until the slack is 0.5 mm or less. Playback tape in REV mode and confirm that tape slack in between the guide No. 3 (TG-3) ① and capstan ② is 0.3 mm or less, the adjustment is complete.

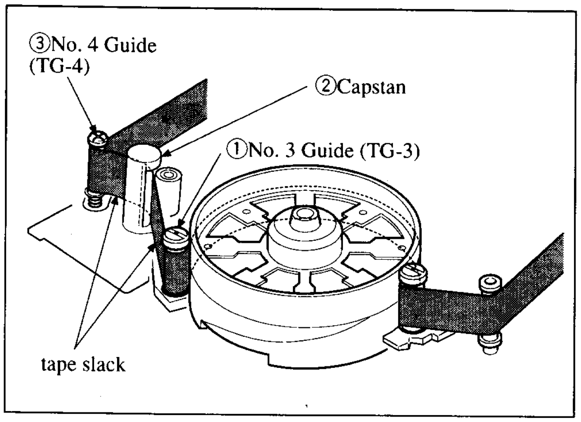


Fig. 29

## 4-4. CUE, REV Waveforms Check (Refer to Fig. 30.)

1) Playback the tracking alignment tape in REV mode.
   Confirm that pitches between the peaks of the waveform are equally spaced for 5 seconds or longer.
   The pitches are not equally spaced, perform sections "4-2. Tracking Adjustment" and section "4-3. No. 4 Guide Adjustment".
2) Playback the tracking alignment tape in CUE mode.
   Confirm that pitches between the peaks of the waveform are equally spaced for 5 seconds or longer.
   The pitches are not equally spaced, perform section "4-2. Tracking Adjustment".

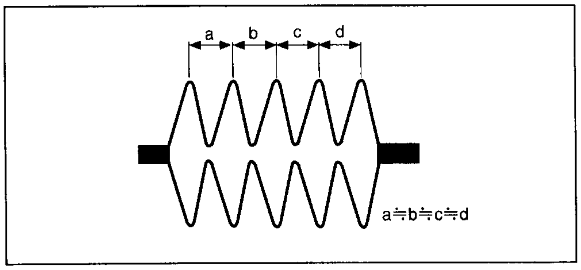


Fig. 30

## 4-5. Checks After Adjustments

### 4-5-1. Tracking Check

1) Confirm that amplitude of the RF waveform decreases to about 3/4 when the machine enters the PATH mode. (Refer to Fig. 31)
2) Confirm that the minimum amplitude (EMIN) of the RF waveform is 65 % or more of the maximum amplitude (EMAX). (Refer to Fig. 32)
3) Confirm that the RF waveform does not have too much fluctuation. (Refer to Fig. 33)

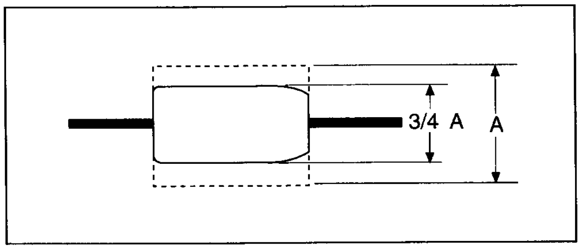


Fig. 31

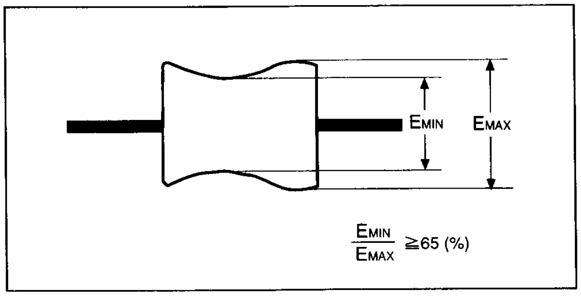


Fig. 32

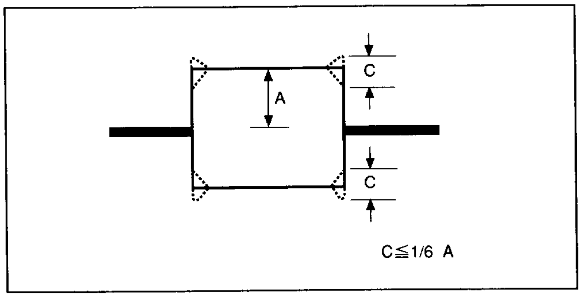


Fig. 33

### 4-5-2. Waveform Build-up Check (Refer to Fig. 34.)

1) Playback the tracking alignment tape.
2) Turn OFF the Track Shift mode.
3) Eject the tape once, insert and load the tape.
4) Start playing back the tape and confirm that the RF waveform builds up in three seconds with flat envelope. Confirm at this time that tape slack does not occur near pinch roller.
5) Playback the tape in CUE/REV and FF/REW modes respectively. Confirm that the RF waveform builds up in three seconds with flat envelope. Confirm at this time that tape slack does not occur near pinch roller.
6) Repeat the check items 3) to 5) again.

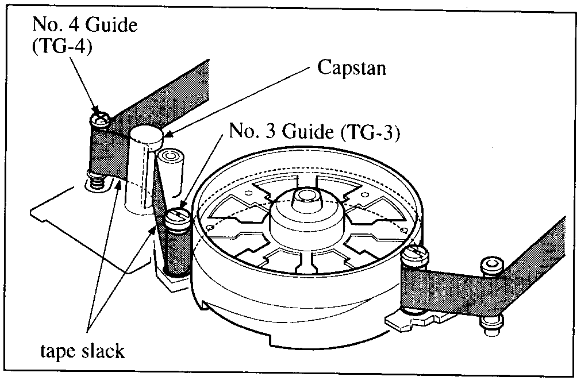


Fig. 34

### 4-5-3. Tape Pass Check (Refer to Fig. 35.)

1) Insert a thin video tape such as P6-120MP (NTSC) or P5-120MP (PAL). Playback the thin tape. Confirm that there is no clearance or curl of 0.3 mm or more at the following points: Upper flange of guide No. 2, upper flange of guide No. 3, upper and lower flanges of guide No. 4.
2) Confirm that there is no clearance or curl of 0.3 mm or more at each tape guide when the FF button is pressed from the playback mode to enter the CUE mode, and when the REW button is pressed from the playback mode to enter the REV mode.

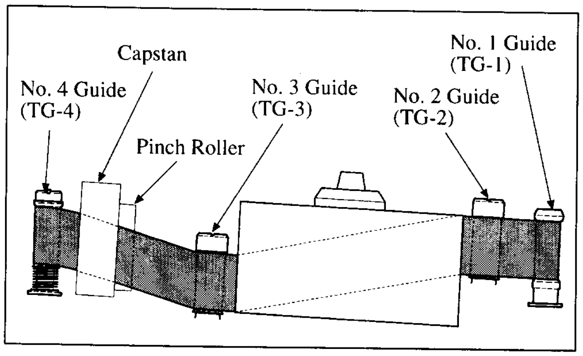
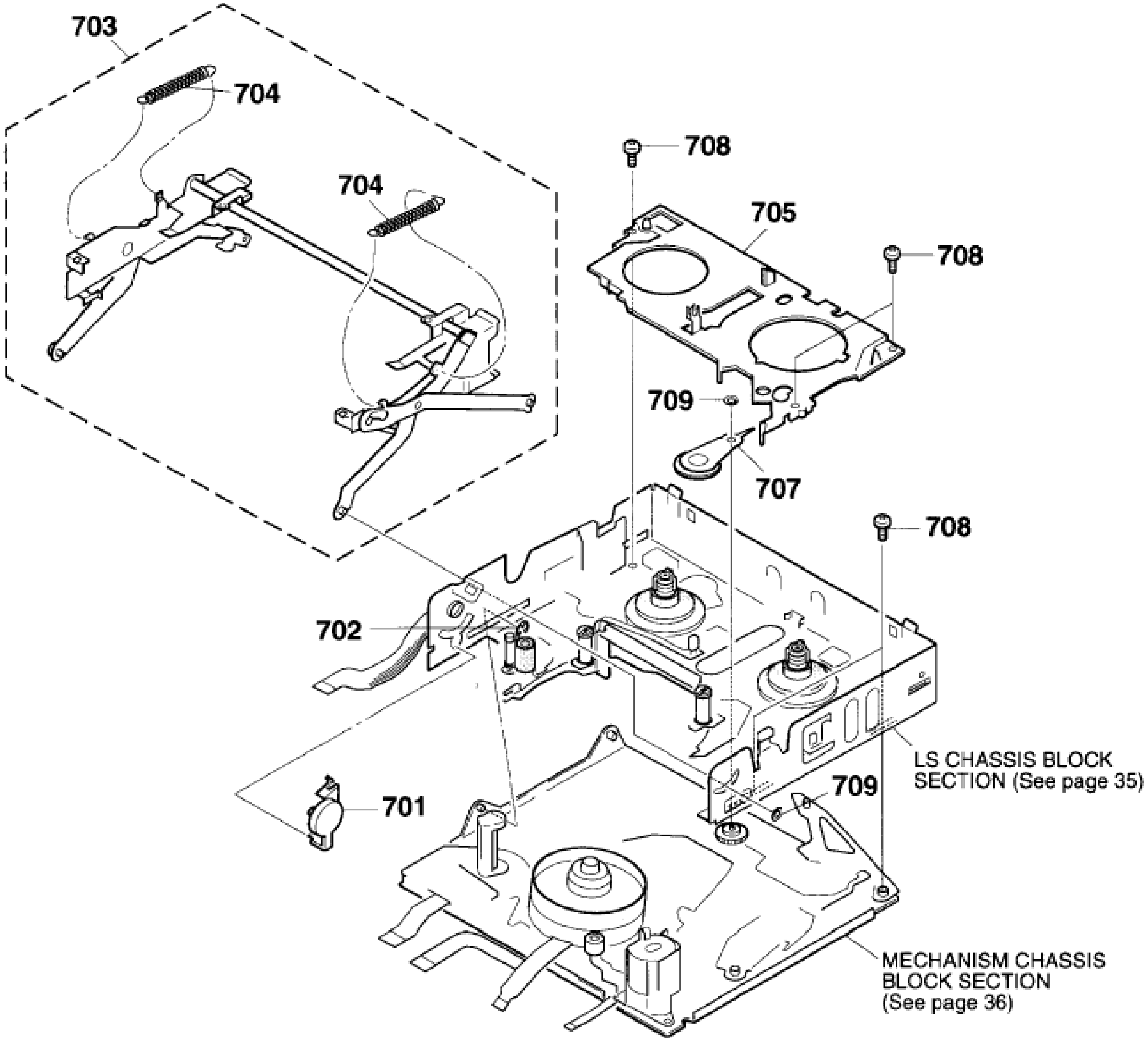
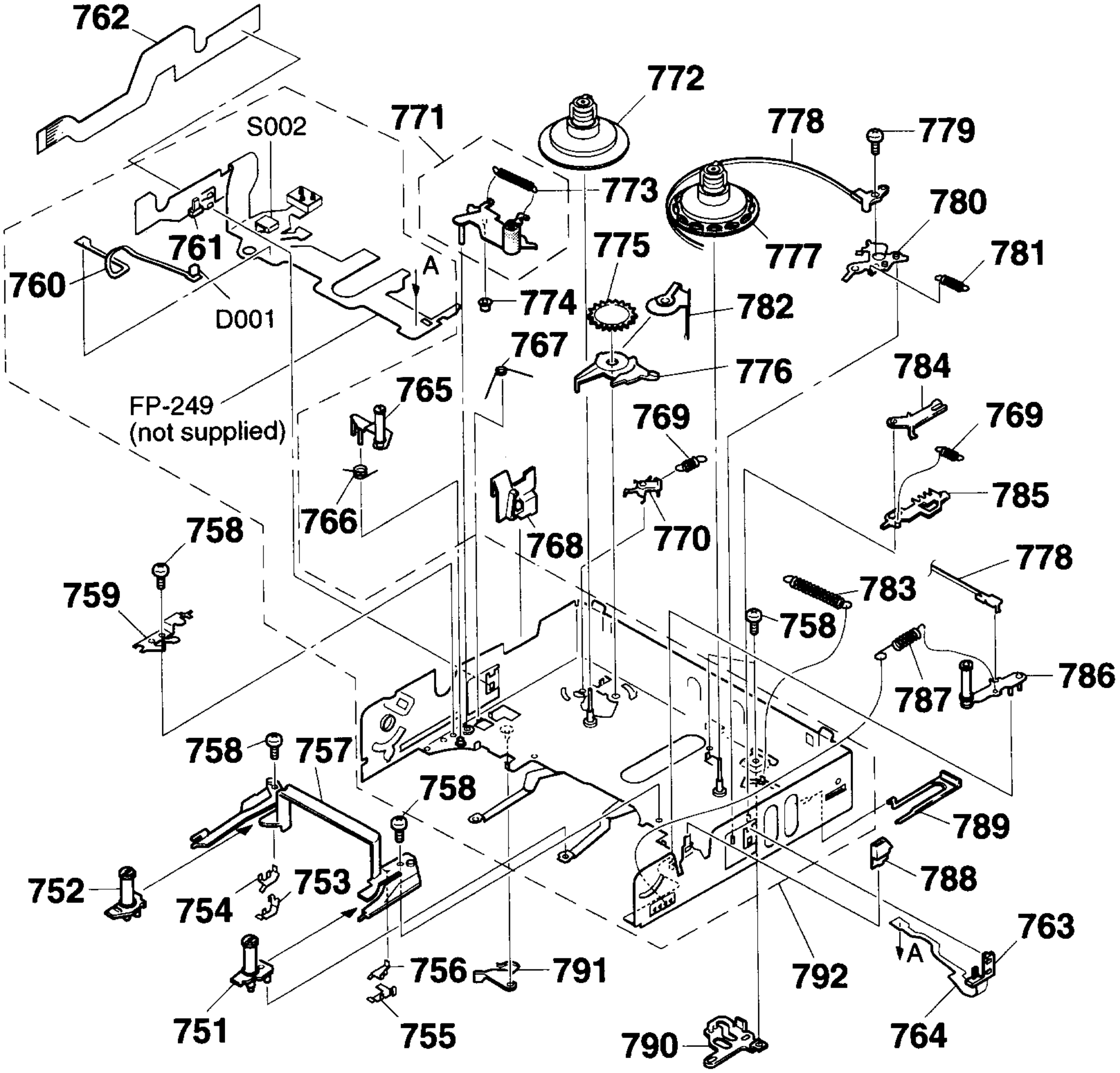


Fig. 35

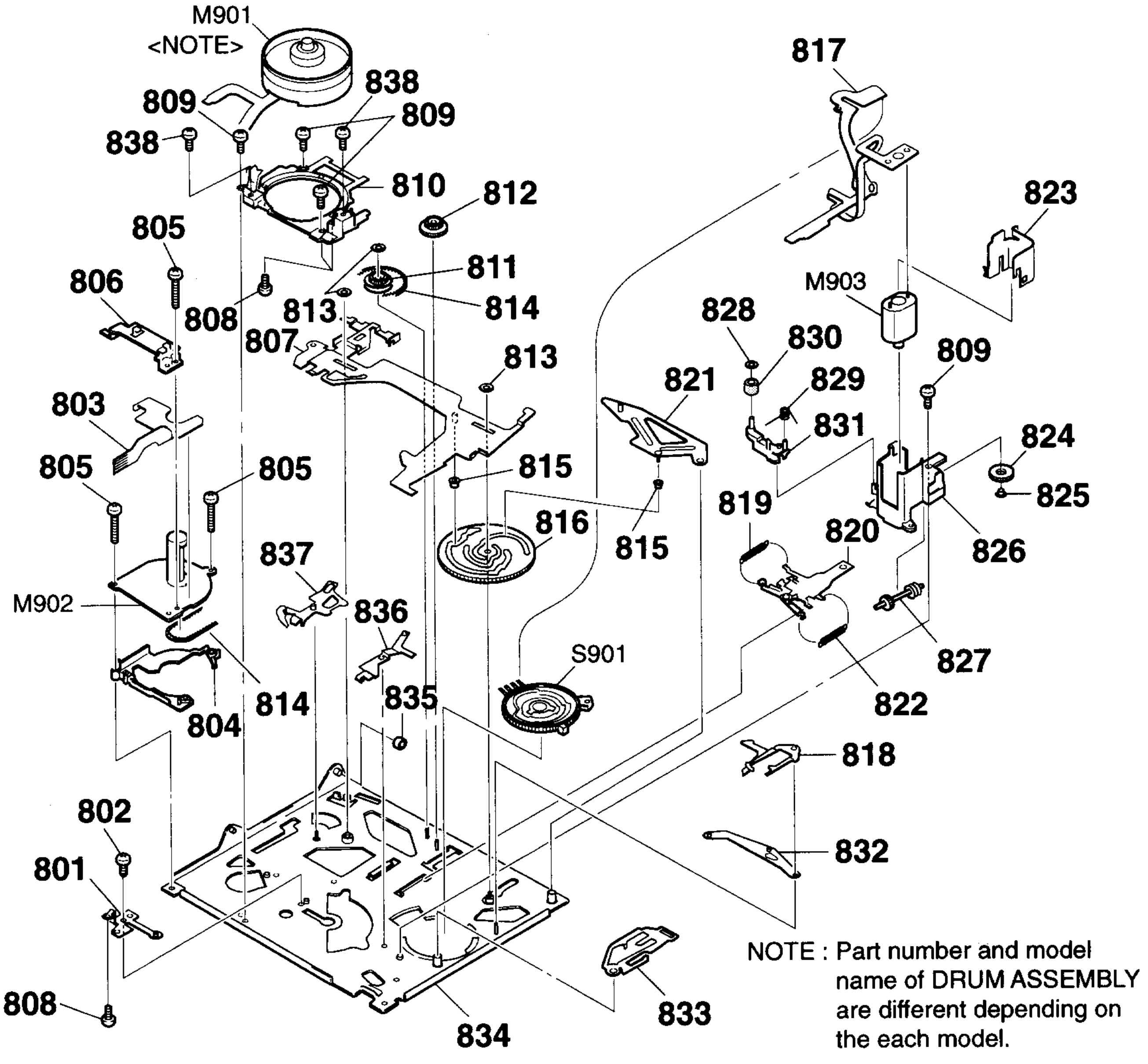
## 5-1. Cassette Compartment Block Section


703
704
704
708
705
708
709
707
708
702
LS CHASSIS BLOCK SECTION (See page 35)
709
701
MECHANISM CHASSIS BLOCK SECTION (See page 36)

## 5-2. LS Chassis Block Section


762
S002
771
772
778
779
773
780
761
777
775
781
760
D001
774
782
767
776
FP-249
(not supplied)
765
784
769
769
766
785
768
770
758
778
759
783
758
786
787
758
757
758
789
752
753
788
754
763
756
791
792
751
755
790
764
A
A

## 5-3. Mechanism Chassis Block Section


M901
<NOTE>
838
809
809
838
810
812
805
811
806
808
813
814
807
813
817
823
M903
828
830
809
829
821
831
803
805
805
815
824
825
819
816
815
820
826
837
M902
836
827
S901
814
835
822
804
818
802
832
801
808
834
833

NOTE : Part number and model name of DRUM ASSEMBLY are different depending on the each model.